Two Clinical Lectures
ON
ENLARGEMENT OF THE PROSTATE.

Delivered at the Medical Graduates' College and Polyclinic

BY P. J. FREYER, M.A., M.D., M.CH.,
SURGEON TO ST. PETER'S HOSPITAL FOR STONE AND URINARY DISEASES.

LECTURE I.

Delivered on Nov. 2nd, 1900.

GENTLEMEN,—To-day I propose considering with you that condition commonly called "hypertrophy of the prostate," an enlargement of the organ incidental to declining years and which frequently causes obstruction to the urinary flow. It is sometimes named "senile" enlargement, a not particularly appropriate description, as the disease, if it occur at all, sets in long before senility in the general acceptation of that term supervenes, and one that men who have scarcely turned middle life sometimes resent as offensive. As the disease is not a hypertrophy as generally understood, perhaps the most appropriate description would be enlargement of the prostate of declining life, but for brevity we will refer to it simply as "enlargement of the prostate."

It will be convenient in the first instance to briefly recall some of the characteristic features of the healthy organ. The prostate is a glandular body which surrounds the neck of the bladder and the adjacent inch of the urethra. In the adult it is of the size and shape of a chestnut, being about one and a half inches broad, one inch long, and three quarters of an inch deep. Its average weight is six drachms. The base is directed backwards towards the bladder, the neck of which it embraces, and the apex forwards, touching the triangular ligament. The under surface, which is smooth and slightly grooved longitudinally, rests on the rectum, with which it is connected by dense fibrous tissue. The prostate consists of two lateral lobes and a median portion placed at the under and posterior aspect of the organ, between the ejaculatory ducts, which perforate the lower part of the gland obliquely before opening into the prostatic urethra. This median portion is, as a rule, a mere transverse band, but occasionally a rounded prominence is formed in this situation even in the healthy organ, forming a true third or middle lobe, which, as we shall presently see, plays an important rôle in enlargement of the gland. It is to be noted that this median portion lies immediately beneath the neck of the bladder, forming, in fact, its floor.

Structurally the prostate is composed of glandular substance and a stroma made up of muscular and fibrous tissues. The glandular substance consists of follicular pouches with ducts, lined with columnar epithelium. The excretory ducts, from 12 to 20 in number, open into the urethra beside the verumontanum. The muscle forms the bulk of the prostate, its function being to eject the glandular secretion, or prostatic fluid, to mix with that from the ejaculatory ducts.

It is now recognised that the prostate is a purely sexual organ. It has a tendency to increase in size in a large proportion of men after the age of 50 years, but the enlargement does not generally declare itself by any marked symptoms till after 55. This rule does not hold good in India, for it is generally recognised by surgeons in that country that decided symptoms of enlargement of the organ manifest themselves in natives as early as at the age of 45 years. It must be borne in mind, however, that the expectation of life in Orientals is about 10 years less than in Europeans—that is to say, a native of India is at 45 years of age comparatively as old a man physically and sexually as a European is at 55 years. Even in Europe we occasionally meet with instances of true enlargement at an earlier age, but they are not sufficiently numerous to invalidate the general rule laid down.

It is estimated from statistics collected by Thompson and others that about 33 per cent. of men beyond 55 years of age are subject to enlargement of the prostate, but not more than 5 per cent. ever suffer from symptoms.

The overgrowth may be uniform in character, the hypertrophy extending equally to all parts of the gland, which thus preserves its symmetry. This is the form of enlargement that is least liable to be attended by symptoms. But any one or two of the three lobes into which the organ may be divided surgically may assume a more pronounced overgrowth than the remaining portion of the gland. Thus there may be a very marked enlargement of one or both lateral lobes, the middle lobe being scarcely prominent, or there may be an outgrowth of the latter to such a degree as to cause obstruction, or even retention, of urine and no enlargement of the general body of the gland be felt through the rectum. It is the enlargement of the middle lobe that gives rise to the most urgent symptoms. Situated as it is immediately beneath the inner orifice of the urethra, even a small nipple-shaped projection of the median portion may give rise to troublesome symptoms by presenting a valvular obstruction to the flow of urine. This lobe has a tendency to grow upwards and inwards into the bladder, pushing the trigone before it and forming a pyramidal tumour with narrow pedicle, which during micturition falls against the urethral orifice, plugging it somewhat after the manner of the glass ball in a soda-water bottle.

If we examine the enlarged prostate histologically we find that all its constituents are invariably increased, though, as a rule, to an unequal degree. It is not a neoplasm—the microscope revealing no new elements; nor is it the result of inflammatory action. It is an irregular hypertrophy of the organ but not of a compensatory character, no useful purpose being served thereby. Sometimes the overgrowth is mainly confined to the stroma, and particularly to the fibrous elements, thus partaking of the character of a fibro-myoma. As a rule, however, hypertrophy of the glandular tissue predominates to such an extent that some authorities regard the enlargement as an adenoma throughout its whole course, as it would seem always to be in the beginning. The most important feature of the enlargement from a surgical point of view is the presence of localised overgrowths with more or less defined capsules, forming the so-called "prostatic tumours," which may occur in any part of the gland. These are always confined within the capsule of the prostate; though, carrying the capsule before them, they may project from its surface as bosses or form polypoid-like outgrowths projecting into the cavity of the bladder and connected with the main body of the organ merely by a narrow pedicle, which, however, is always composed of true prostatic tissue.

The average weight of the normal prostate being six drachms, one weighing seven drachms is regarded as hypertrophied, and the weight may increase to several ounces. In size the enlarged prostate may reach from anything beyond that of a chestnut to that of an orange, or even of a cocoanut. The urethra and bladder will be altered in shape in accordance with the size and form of the overgrowth. The prostatic urethra is invariably lengthened and may attain to four inches, so that 12 or 13 inches of catheter may be introduced before the urine begins to flow. When the lateral lobes are symmetrically enlarged the urethra is compressed from side to side and on section resembles a vertical slit. When one lobe only is enlarged the urethra, being diverted to the opposite side, will be curved laterally. If the median lobe be hypertrophied the urethra will be curved upwards towards the inner orifice, and if it be very large, pyriform, and projecting into the bladder, there will be a channel on either side, the urethra being Y-shaped. When the overgrowth assumes the form of a collar round the neck of the bladder, as it sometimes does, the urethra will necessarily be contracted at this situation.

The prostate being debarred from expansion in front by the triangular ligament and beneath by the dense fascia between it and the rectum, in its enlargement it gradually advances forwards and upwards in the direction of least resistance. The urethra is carried with it and the inner orifice placed on a higher level than the base of the bladder, which remains stationary. A post-prostatic pouch is thus formed in the bladder which is never emptied of urine during the acts of micturition. This remaining quantity of urine, which is termed "residual," gradually increases in quantity as the hypertrophy progresses and the muscular power of the bladder diminishes, owing to the persistent overstrain that the organ is subjected to in order to overcome the obstruction to the flow of urine. In the early stages of the disease there is a compensatory hypertrophy of the bladder walls to overcome this obstruction, but in time, owing to the

constant straining, atony and dilatation ensue, so that the bladder may contain several pints of urine. The walls may become extremely thin, or muscular trabeculæ may develop, between which the mucous membrane bulges outwards, forming saccules of various sizes. In course of time changes occur in the ureters and kidneys from the backward pressure due to the obstruction of the urinary flow—changes similar to those that have already been described as taking place in connexion with stricture of the urethra. Hæmorrhoids and prolapsus ani also occur frequently in connexion with this disorder from the constant straining in micturition.

THEORETICAL CAUSES OF PROSTATIC ENLARGEMENT.

Many theories have been from time to time put forward to account for the enlargement of the prostate peculiar to declining life, none of which, however, can be said to fit completely with all the phenomena attending this disorder. I shall confine myself to stating briefly the two rival views that at present hold the field.

Guyon and the French school generally maintain that the enlargement of the prostate is not a purely local disease; in that it is merely a local manifestation of a constitutional disorder which commences with general arterial sclerosis and ends in fibroid degeneration; that the genito-urinary organs—prostate, bladder, ureters, and kidneys—are liable to undergo this change in a pronounced form, the muscular and glandular structures being replaced by dense fibrous tissue, but that these latter changes are never independent of general atheroma. The enlargement of the prostate and changes already described as taking place in the urinary tract behind are held to be coincident and not related to each other as cause and effect. It is pointed out in this connexion that all the symptoms commonly regarded as the result of hypertrophy of the prostate may occur when there is no enlargement of that organ as a result of sclerosis of the bladder. Against this theory it is urged that the fact that atheroma and enlargement of the prostate occur together is no proof that the latter is the result of the former—as well might cancer and other diseases which are liable to occur during the atheromatous age be attributed to this degeneration; that enlargement of the prostate occurs when there is no such general atheroma of the system; that arterial sclerosis induces atrophy rather than hypertrophy; that enlargement of the prostate frequently commences before the atheromatous period; and that this enlargement always commences as adenomatous overgrowth and not as fibroid degeneration.

The other theory is that propounded by Velpeau, and at present supported by some of the highest authorities in this country and America, notably Thompson and White—viz., that enlargement of the prostate is analogous to fibroid disease of the uterus. In support of this view it is pointed out that the utricle of the prostate is the equivalent of the uterus (and vagina); that the structure of the prostate and uterus are somewhat similar; that there is a great resemblance in structure, position, and mode of growth between the fibromyomata found in the uterus and the overgrowths that constitute enlarged prostate; and that the disease in both instances sets in when sexual activity is on the wane and does not originate when that activity has completely ceased. In opposition to this view are advanced the facts that the utricle, which is the true analogue of the uterus, takes no active part in the prostatic enlargement and that the uterine tumours commence as fibro-myomata, whereas the prostatic overgrowths originate as adenomata.

One of the most important effects, from a surgical point of view, of the acceptance of Guyon's theory, if carried to its logical conclusion, would be to prohibit the employment of any form of operative interference aimed at the radical cure of the disease—to limit the treatment, in fact, to the palliative kind. Whatever may be thought of the other view, it offers, at any rate, a plausible basis for active interference, as will subsequently appear.

SYMPTOMS.

We now come to the symptoms of enlarged prostate. A man aged over 50 years consults you because (1) he finds that for some time he has suffered from increased frequency of micturition which troubles him more at night than throughout the day; (2) he has some difficulty in starting the stream; (3) there is diminution in the strength of the urinary flow, which instead of being projected in the normal curve falls directly downwards from the meatus simply by its own weight; (4) he strains to propel the urine onwards, but his efforts have little or no effect in strengthening the stream, but, on the contrary, the straining may arrest the flow completely; (5) there is incomplete stoppage, as indicated by dribbling at the end of micturition; and (6) there may be intermittency of the flow due to the ball-valve action of the middle lobe. If the patient does not complain of pain, beyond perhaps an undefined aching about the perineum, and there is no hæmaturia, the case is in all probability one of enlargement of the prostate in a comparatively early stage. It will be observed that none of the symptoms are referable to the prostate itself. They are attributable to interference with the functions of the urethra and bladder caused by changes in the gland which are so gradual that they do not cause pain like inflammation or malignant disease. As the disease progresses, unless relieved by art, all the symptoms are aggravated and others—notably pain and hæmaturia—supervene.

In the early stages of the disorder the increased frequency of micturition is due to some outgrowth at the neck of the bladder which acts as an irritant, like a foreign body, to this the most sensitive portion of the organ. Local congestion or even inflammation of the mucous membrane ensues and this induces further frequency. Later another factor comes into play: a post-prostatic pouch is formed in which a gradually increasing quantity of urine is retained after micturition. This retained urine is, as we have already seen, termed "residual," and the manner in which it causes increased frequency requires some explanation. The bladder is a reservoir capable of containing a certain quantity of fluid, which is voluntarily discharged at convenient intervals. Let us assume that the quantity passed in 24 hours is 50 ounces and that the capacity of the bladder is 10 ounces. It will thus be necessary to empty the bladder at least five times in the 24 hours. But if, the actual capacity remaining the same, a pouch is formed in the bladder containing, say, four ounces of urine that is never expelled, it follows that the *effective* capacity is reduced to six ounces, so that in order to get rid of the 50 ounces that daily flow into it the bladder must be discharged of these six ounces about eight times. As the pouch enlarges and the bladder walls grow weaker the quantity of fluid permanently retained increases and its *effective* capacity diminished, so that eventually micturition has to take place every half-hour or even less. Indeed, this condition may advance to such an extent that the bladder is incapable of discharging any urine whatever, when we have another symptom—viz., continuous dribbling, the urine passing away by day and night as rapidly as it enters the bladder, but the latter always remaining full. The urine passing in this condition is termed the "overflow" and has to be distinguished from "incontinence," a rare occurrence in certain spinal complaints in which the urine runs away from an empty bladder.

The frequency of micturition is, as already stated, worse at night, or rather towards the latter part of the night, and in the early morning on rising—in this respect contrasting with the frequency due to stone, which is always worse in the day time when the patient is going about. Why this should be so has not as yet been satisfactorily explained. It cannot be due to the recumbent position alone, for it does not occur in the daytime if the patient keeps lying down provided he remains awake. It may, as has been suggested, be due to the fact that during the first sleep of the night the bladder is not relieved for a longer period than usual. Distension of the bladder results, with congestion, giving rise to increased frequency which does not subside for some hours till the congestion has subsided.

The urine in the early stages of the disorder is clear and acid. The quantity will probably be increased and the specific gravity be lowered—changes due to fibroid degeneration of the kidneys met with in elderly persons, particularly when prostatic obstruction is also present. As the disease advances the urine becomes cloudy and gives off a fishy odour. Sooner or later the urine has a tendency to decompose, whether as a contingency of catheterism or otherwise, cystitis sets in, and pus is deposited on the bladder walls in thick flakes. This condition is favourable to the formation of phosphatic calculi which are a frequent complication of enlarged prostate, lying in the post-prostatic pouch or in the cysts formed as already described by the bulging-out of the mucous membrane between the muscular trabeculæ.

DIAGNOSIS.

With the presence of symptoms that point to the probable existence of enlargement of the prostate we proceed to verify

our diagnosis by a physical examination of the urethra and rectum.

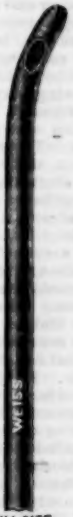
The patient is first directed to pass all the urine he can and we note the strength and general character of the stream. He is then placed on his back on a couch; the glans and foreskin are thoroughly washed with an antiseptic, and a catheter, 13 or 14 of the French scale (7 or 8 E), is slowly and carefully introduced. Our choice of catheters will lie between a Jaques's vulcanised rubber (Fig. 1), a very pliant cylindrical gum-elastic (Fig. 2), or a French coudée (Fig. 3). This latter is, as a rule, the most

FIG. 2.

FIG. 1.

½ FULL SIZE

FIG. 3.



FULL SIZE

easily introduced. It should be held almost horizontally at first, with the curved point turned downwards, and gradually elevated into the perpendicular position as the instrument passes onwards through the urethra and into the bladder. It should be noted if there be any obstruction at the neck of the bladder and if the end of the catheter rides over it, which would probably indicate an enlarged middle lobe. The quantity of urine drawn off, if any, indicates the amount of "residual" urine. This will vary from a few drachms to three or four pints, according to the stage the disease has reached when the patient first comes under examination. If the quantity be considerable he will express surprise, seeing that he had just previously passed urine and was under the impression that he had emptied his bladder. If the quantity of urine be large the whole of it should not be drawn off at the first interview, lest the patient may faint, or hæmorrhage set in from the vessels of the bladder giving way through loss of their habitual support. If the quantity be moderate a second or third examination should be made to avoid error as to the real amount of the "residual" urine. Before introducing the catheter the hypogastric region should be palpated, for in this way it may at once be recognised that the bladder is distended with urine.

We next make a digital examination of the rectum. The forefinger is greased, the crevice beneath the nail having been previously filled with soap, and introduced slowly and gently to avoid giving pain, and a careful survey of the prostate is made. The extent of the enlargement, if any, should be noted and whether this is general or confined more to one side than the other; whether the contour of the gland is smooth or nodulated; what its consistency, whether soft, indicating adenomatous enlargement, or hard from fibroid overgrowth; also if pressure on the gland gives pain and, if so, to what degree. Much pain with fluctuation would suggest the probability of abscess, particularly if the patient has had fever recently; uterine hardness with nodulation would suggest malignant disease; and a very hard nodule in the substance of the gland accompanied by tenderness on pressure the presence of a calculus in the organ. The finger should pass beyond the gland if possible and sweep the base of the bladder, to ascertain if this is normally soft or hard from sclerosis. Possibly a stone may be felt in the post-prostatic pouch. The examination will be facilitated by making counter-pressure on the abdomen above the pubes with the other hand. The patient should next be placed on his knees on the couch, with his head bent forwards and downwards and the buttocks rendered prominent by the thighs being flexed on the legs. The finger is again introduced and the rectum surveyed as before. This position renders the prostate more prominent in the rectum than the recumbent one and the finger can be introduced farther. The impressions conveyed to the finger in both positions are contrasted and important information may thus be acquired.

Little information with reference to the condition of the middle lobe will be gained by rectal examination. In fact, there may be great outgrowth of this lobe into the cavity of the bladder when no enlargement of the gland is recognised by the rectum. It will, as a rule, be desirable to ascertain the extent and form of the enlargement of the middle lobe. A rough estimate of this can be arrived at by the introduction of a short-beaked sound. When the instrument has entered the bladder the handle is depressed between the thighs and the beak rotated to one side and then to the other, feeling on which side of the instrument the enlarged middle lobe lies and to what extent it projects into the bladder. If the finger be introduced into the rectum whilst the sound is in the bladder a rough idea of the size of the outgrowth may be formed.

Examination of the bladder by the cystoscope will in a large proportion of cases give a still more correct estimate of the size and shape of the middle lobe and as to whether or not it is capable of being removed by operation in a manner that will be described later. At our first visit, however, it will not be advisable to employ either sound or cystoscope. This should always be deferred to a later interview, when the patient should be examined in his own room. At the first visit we rest content with the information gained by the catheter and by rectal examination, taken in connexion with the general symptoms.

After examination the patient should go home and to bed for the day. Indeed, when the case is at all far advanced and the patient feeble it will be advisable to postpone the introduction of even a catheter till he is in his own room.

UNIVERSITY COLLEGE, BRISTOL. — The second annual dinner of the University College Colston Society will take place in the new lecture hall of the college on Jan. 15th under the presidency of Mr. Albert Fry. The guest of the evening will be Sir Michael Foster, K.C.B., M.P., and amongst others Sir William S. Church, Bart., President of the Royal College of Physicians of London, and Canon Ainger will be present. The object of this society is the endowment of Colston chairs in connexion with University College, Bristol, and the assisting of the College in such manner as the committee of the society may approve. In 1900 the sum of £325 was handed to the college by this society.

MEDICAL OFFICERS AT FEVER HOSPITALS.— At the meeting of the Bristol Town Council held on Jan. 2nd the sanitary committee reported that although they had advertised for a resident medical officer for the Ham Green Fever Hospital at a salary of £100 per annum they were unable to obtain any suitable candidate. The committee suggested that the salary be increased to £150 a year, and the town council eventually decided to agree to this proposal, an amendment to increase the salary to £200 per annum being defeated by 38 votes to 30.

PNEUMOCOCCIC ARTHRITIS.

BY EDWARD J. CAVE, M.D., M.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL UNITED HOSPITAL, BATH.

IT would seem that hitherto no observations have been made in this country of the occurrence of arthritis associated with the presence of the pneumococcus in the affected joint, and although the association is probably a very uncommon one, yet, having regard to the comparative rarity of bacteriological examination of morbid fluids, one cannot but suppose that such cases may have occurred and yet escaped detection. The case here in related led to an examination of the literature of the subject, and as some 30 instances are recorded by continental observers there exists sufficient material to form the basis of a fairly complete picture of the disease. The observations up to 1899 have been collected by Dr. L. Leroux[1] of Paris and are embodied in an excellent monograph. These cases, together with three others recorded during the past year, are analysed in the accompanying table. Following Dr. Leroux no account has been taken of records prior to Weichselbaum's[2] observations in 1888, although not a few instances are scattered through the periodical literature of the past century in which arthritis has supervened during or shortly after an attack of pneumonia,[3] and in some of these the clinical accounts are so definite and conform so closely to what we now know of the course of the affection as to leave little doubt of their pneumococcic nature. Noticeably is this the case in some records of Grisolle.[4] Four patients, he says, who had never suffered from any form of articular or muscular rheumatism were attacked either early in the course of a pneumonia or shortly after its subsidence with acute arthritis, affecting in one case the two shoulders, in another the right knee, in the third the left ankle, and in the fourth the right wrist and the left knee. The last case was examined after death and both the affected joints were distended by odourless pus and the synovial fringes were injected. The joint affection was always a continuous one with none of the fugitive character of true rheumatism, and after discussing the relations with this latter disease Grisolle came to the conclusion that the nature of the two affections was quite distinct. He could not, however, exclude the possibility of a pyæmic process. In this country Wilson Fox,[5] after referring to Grisolle's cases, mentions that of a man of dissipated habits who was under the care of Dr. Russell Reynolds for pneumonia. On the day after the crisis there occurred a slight rise of temperature and an effusion into the knee-joint. The pneumonia resolved perfectly, but the arthritis became chronic. These cases occurred prior to the discovery of the pneumococcus and the true significance of the association could not therefore be appreciated. It was not until 1883 and following years that the infective nature of pneumonia, together with the causative agency of the pneumococcus in that disease, was worked out by Talamon, Sternberg, Fraenkel, Weichselbaum, and other observers, and shortly after the earliest publication of this association was discovered the pathogenic efficacy of the same organism in the production of inflammations of various serous membranes and of the joints. Attacks of arthritis associated with pneumococci were recorded in 1884 and 1885, but the first case to be satisfactorily established was that of Weichselbaum which has been already referred to and which was published in 1888. As in the case recorded in this paper the observation related to a suppurative arthritis of the shoulder.

In April, 1900, I was asked to see a man suffering from pneumonia. I found that the patient was a stout, burly farmer, 51 years of age, of alcoholic habits. When I saw him he was moribund. The account of his illness given to me was that he had been seized 11 days before with rigor, pain in his side, and other symptoms of pneumonia, with physical signs of consolidation confined to the lower lobe of the *right* lung. After a severe attack with much delirium crisis supervened on the sixth day of his disease and for 12 hours his temperature was normal or below and his general condition improved. In the evening of the same day his temperature again rose to 103·5° F., violent delirium set in, and on the following day were detected signs of consolidation at the base of the *left* lung. It was on the fifth day of this recrudescence of the disease that I saw him, when he was in a state of coma-vigil, with a pulse of 160 or over, profusely perspiring, with dilated pupils, and evidently near his end. He was too ill to be examined, but on looking at the front of his thorax I was immediately struck with the condition of his left shoulder. This was swollen, deep red, and œdematous, and slight movement of the upper extremity evoked, even in his well-nigh unconscious state, signs of suffering and remonstrance. I was told that five days earlier, during violent delirium, and while struggling with his attendants, he complained that his arm had been twisted. The next day he complained persistently of pain in his shoulder, being delirious for most of the day. On the following day (the third of the injury and ninth of his disease) his shoulder was noticed to be red and swollen and the least movement led to violent exclamations. The condition had persisted, with the appearance of œdema, until the time of my visit. He died within an hour, and shortly after death, no complete post-mortem examination being possible, the skin over the deltoid muscle was seared with a hot iron and a sterilised needle was thrust into the joint. A syringeful of thick greenish creamy pus was drawn off. This contained an abundance of pneumococci, in pairs and short chains of three or four elements, distinctly encapsuled and in pure culture. The leucocytes were polynuclear. The cocci stained well by Gram's method, and when stained by Ziehl's solution and partly decolourised in 1 per cent. acetic acid the capsules were very well shown. Typical dew-drop cultures were obtained on agar and blood serum. Its virulence to mice or rabbits was not tested.

This is a very typical case of the acute suppurative form of pneumococcic arthritis and it illustrates many of the ordinary features of the disease; its occurrence as a complication or immediate sequel of pneumonia, its tendency to affect a joint previously damaged by trauma or disease, a "locus minoris resistentiæ," its acute course, its early suppuration, and its commonly fatal event.

Of the 31 cases analysed in the table 23 patients died and eight recovered. The vast majority of the cases occurred in immediate association with pneumonia (28 out of 31), the symptoms of arthritis usually following the onset of the pneumonia at intervals varying from a few days to a fortnight. In two instances (observations of Boulloche and Oliva) the arthritis is said to have preceded the pneumonia by an interval of three days in one case and seven days in the other. Both these cases occurred in children, being the only instances recorded under 30 years of age, and that of Oliva is so unlike most of the other cases in the table that it will be referred to later in connexion with a case of multiple arthritis which the writer has hesitated to include. Three cases are described as occurring independently of pneumonia. The first, related by Griffon[6] in 1896, was that of a woman, aged 71 years, who was admitted comatose with a temperature of 104° F. and a suppurative arthritis of the right ankle. The joint was incised on the same night, but the patient succumbed on the following day. In addition to extensive suppuration in the ankle and calcaneo-astragaloid joints and the neighbouring synovial sheaths, the necropsy disclosed meningitis of the vertex and a recent vegetating endocarditis. Pneumococci were demonstrated in the pus of the affected joint, in the cardiac vegetation, and in the purulent exudation on the meninges. The second case is related by Widal and Meslay[7] in 1896. The patient, an adult male who was the victim of chronic impregnation with lead, complained of dysphagia and arthritis of the first metatarso-phalangeal joint of the left foot; the joint was painful and slightly swollen, and the skin over it was hot and red. The temperature varied from 101° to 102·2° F. At the end of a fortnight the temperature fell and the pain abated, but the patient was mildly delirious and extremely feeble. There was a localised pericardial

[1] Les Arthrites à Pneumocoques, Paris, J. Rousset, 1899. I have made the freest use of the observations collected in Leroux's work.

[2] Ueber seltene Lokalisationen des Pneumonischen Virus, Wiener Klinische Wochenschrift, 1888, Nos. 28-32.

[3] No reference is made here to the well-known association of pneumonia or of physical signs indistinguishable from those of pneumonia at the left base with acute pericardial effusion in the course of rheumatic fever. In the recorded cases the general symptoms and characteristic sputa of pneumonia have generally been absent and the diagnosis made from the physical signs alone. Cf. Southey: THE LANCET, Dec. 9th, 1882, p. 983; Cheadle: THE LANCET, May 5th, 1888, p. 861.

[4] Traité de la Pneumonie, second edition, 1864, p. 394.

[5] Treatise on Diseases of the Lungs and Pleura, 1891, p. 333.

[6] Bulletin de la Société Anatomique, April, 1896.

[7] Bulletin de la Société Médicale des Hôpitaux, Jan. 24th, 1896.

friction rub. Ten days later he died collapsed and the necropsy disclosed a large purulent pericardial effusion, and a sero-purulent collection in the affected metatarso-phalangeal joint. The pus both from the pericardium and the joint contained the pneumococcus in pure culture. The third case, described as occurring independently of pneumonia, is also related by Widal in association with Lesne.[8] A man, aged 68 years, with good previous health except for slight chronic rheumatism of his smaller joints, was seized quite suddenly with a violent chill, headache, fever, and general aching. The next day he had pains in the whole of his left upper extremity. On the following day, the third of his illness, the pain was localised in the left sterno-clavicular joint and the back of the hand, and these parts were red and swollen. He was admitted on the eighth day when his temperature was 102·2° F., and there was an inflammatory swelling over the left sterno-clavicular joint and on the back of the left hand, especially over the third and fourth metacarpal bones. The swelling on the hand gradually abated, but there was still a little puffiness when he was discharged six weeks later. The sterno-clavicular joint suppurated and a small quantity of pus withdrawn on two occasions by a sterilised pipette showed a pure culture of pneumococci. The swelling was gradually absorbed without incision, but there remained some enlargement of the inner end of the clavicle.

The affection is essentially one of adult and advanced life and is far commoner in males than in females (in 28 cases there were 25 males and three females). Both these peculiarities may stand in relation to the predisposing influence of previous damage of the joint, a point to be considered later with the experimental pathogeny of the disease. The age incidence in 29 cases is as follows: from one to 10 years, two cases; from 10 to 20 years, no cases; from 20 to 30 years, one case; from 30 to 40 years, five cases; from 40 to 50 years, nine cases; from 50 to 60 years, six cases; from 60 to 70 years, four cases; and from 70 to 80 years, two cases. The arthritis is commoner in the upper extremity than in the lower. In 14 cases the upper extremity was alone affected; in 10 cases the lower extremity alone; in the remaining seven there was a multiple lesion affecting joints of both the upper and the lower limbs. In 19 cases inflammation was confined to a single joint; in the remainder two or more joints were involved—viz., in seven instances two joints, in two cases three, in one case four, while in the two remaining cases the arthritis was multiple and affected more than four joints. With the exception of the hip the larger joints seem more prone to be affected than do the smaller. Thus, of 41 joints affected the sterno-clavicular was concerned four times, the shoulder eight times, the elbow five times, the wrist six times, the metacarpo-phalangeal once, the hip twice, the knee 12 times, the ankle once, and the metatarso-phalangeal twice. In 27 of the 31 cases, one or more of the joints suppurated, in one case the occurrence of suppuration was doubtful, and in three cases there was no suppuration, the fluid effused into the joint being of a sero-fibrinous character. In two or three cases of multiple arthritis the inflammation has been suppurative in one joint and serous in another; this was noticeably the case in the patients of Rendu[9] and of Duflocq and Ledamany.[10] In all of the cases included in the table, with one exception—that of Oliva—the pneumococcus was demonstrated in the fluid in the joints, but cases have been noticed of suppurative arthritis following on a recent attack of pneumonia in which the pus on examination has proved to be sterile. Widal suggests that these cases may none the less be due to the action of the same virus, but that the coccus may have died out at the time of examination; or alternatively, that in these cases with sterile effusion the arthritis may be due to the action of toxins produced by the same organism elsewhere in the body. It is certain that some toxins of microbial origin can induce a suppurative arthritis when injected directly into a joint—e.g., the sterilised culture of the bacillus pyocyaneus (Charrin), and it is conceivable that the toxins produced by the pneumococcus in the lung may have a selective affinity for the joints in certain cases, particularly for a damaged and vulnerable joint, and produce there an arthritis with a sterile purulent effusion. But if we grant so much, how much more probable does it seem that the same toxin may induce a sero-fibrinous exudation, knowing as we do that under certain circumstances and in certain subjects the exudation induced by the living organism itself is a serous (non-purulent) effusion. It is therefore not unlikely that some cases of infective pseudo-rheumatism, characterised by a serous arthritis with sterile effusion, may depend upon the action of pneumococcic toxin. It is well-nigh certain that all the forms of febrile multiple arthritis now commonly classed together as "acute rheumatism" are not of the same nature, and Triboulet and Coyon[11] in their most recent contribution on the subject suggest that while simple uncomplicated acute rheumatism which responds at once to salicin treatment and in which no organisms of parasitic nature have been hitherto demonstrated[12] is due to the action of some unknown virus, the severe cases complicated by visceral inflammations are due primarily to the same unknown virus as the simple cases characterised by fever and arthritis alone *plus* a secondary infection which may be of several different kinds, the bacillus of Achalme in some cases, staphylococci in others, and the much-discussed diplococcus in the majority. We may perhaps class Oliva's case as one of this kind due to the action of pneumococcic toxin, or we may consider it as an ordinary case of acute rheumatism accidentally complicated with pneumonia. The patient was a child, aged eight years, with the symptoms of a febrile polyarthritis which was very slightly influenced by salicylate of soda. The pyrexia did not abate and on the seventh day pneumonia supervened with pneumococci in the sputa. The pneumonia and arthritis subsided together ten days later.[13] Leroux includes this case among those of pneumococcic arthritis on, as it seems, hardly sufficient evidence, and himself admits that the record is too scanty to allow of a positive judgment. It may, however, be compared with the following case in which there was not only clinical evidence of pneumonia, but an organism, which was probably the pneumococcus, was cultivated from the blood.

A woman, aged 24 years, was admitted to the Royal United Hospital, Bath, on March 1st, 1900. She had complained on Feb. 25th, four days before admission, of pain in her chest and indigestion. On the following day she had shivering fits followed by pain in both hips. She went to bed and the pain on the same day affected her ankles, knees, wrists, and shoulders. She had had rheumatic fever three times previously, the first attack 12 years before, when she kept her bed for a month, and the last five years before. On admission her temperature was 102° F., her pulse was 110, and her respirations were 24. She had a flushed face and perspiring skin, with an acid smell. The tongue had a creamy white fur. Nearly all of the joints in her limbs were painful, tender, and swollen, and the more superficial joints were slightly red. The heart's apex beat was in the fifth space in the nipple-line, with a slightly increased force. There was a systolic bruit at the apex and the pulmonary second sound was accentuated at the base. She was ordered 20 grains of sodium salicylate with an alkali every four hours. She remained in much the same condition for the next few days, her temperature ranging between 99° and 101°, and although the physiological effects of the salicylate were quite pronounced there was no abatement of the severe pain in her joints. She was very wakeful at night, and on the third day of admission she had a dose of nitrate of potash and Dover's powder at bedtime, which was repeated the next night, but each time without sleep. She also had five grains of calomel. Her mental state now became odd. She was mostly taciturn, but at times, especially after the visits of her friends, very excited and seemingly hysterical. A week after admission she still complained of the pain in her joints and of slight headache. She would talk continuously in a loud, slow, jerky tone and repeat some statement, usually on a religious topic, over and over again. She passed her urine several times into the bed but the motions were controlled. The urine contained a trace of albumin. There was no optic neuritis.

The salicylate, which had been reduced to 15 grains three times daily when she became delirious, was now replaced by salicin, 20 grains every three hours. Three

[8] Ibid., May 6th, 1898.
[9] Ibid., June, 1900, p. 679.
[10] Ibid., April, 1897.

[11] Le Rhumatisme Articulaire Aigu en Bactériologie. Paris, 1900.
[12] The seven cases recently related by Poynton and Paine associated with the presence of a diplococcus were all of severe type and complicated by cardiac inflammation—so severe, indeed, that all but one proved fatal. THE LANCET, Sept. 22nd (p. 861) and 29th, (p. 932), 1900.
[13] Oliva: Rhumatisme et Pneumococcie. Gazzetta degli Ospedali No. 60, 1896.

days later the pains were decidedly less, but she still complained of tenderness in both hands. There had been no further incontinence of urine. She was delirious, at times noisy. On this date (March 11th) was first noted a to-and-fro pericardial friction rub. Her temperature was rather higher, ranging for several days from 102° to 104°. There was more albumin in the urine. There was no perceptible enlargement of the spleen and at no time were there any rose spots on the abdomen. Blood was drawn aseptically from a vein at the bend of the elbow. The skin was washed and scrubbed with soap and spirit lotion, with 0·1 per cent. solution of perchloride of mercury, ether, and alcohol. The skin immediately over the selected vein was frozen with a spray of chloride of ethyl, well seared with a red-hot rod, and perforated by the needle of a sterilised syringe. Ten cubic centimetres of blood were withdrawn from the vein and distributed over a number of agar and blood-serum tubes. From these were grown many colonies of a diplococcus described below. The blood serum at ordinary dilutions showed no clumping influence on emulsions of bacillus typhosus. The red discs numbered 3,900,000 per cubic millimetre and the leucocytes 23,000 per cubic millimetre. On March 13th there were incontinence of urine and fæces, continuous delirium, and some complaint of pain in her head. She frequently tried to get out of bed. There was no optic neuritis. Pericardial friction was still well marked, the heart's apex beating more forcibly and as much as one and a quarter inches outside the nipple-line. The

TABLE OF CASES OF PNEUMOCOCCIC ARTHRITIS.

No.	Observer.	Date.	Sex.	Age.	Relation to pneumonia.	Seat of arthritis.	Nature.	Complications and remarks.	Result.
1	Weichselbaum.	1888	?	54	Pneumonia, 3 days before.	Right shoulder.	Suppurative.	—	D.
2	Belfanti.	1889	?	?	Pneumonia, 11 days before.	Right wrist.	,,	—	D.
3	Monti.	1889	?	?	Pneumonia.	Metacarpo-phalangeal.	(?)	—	D.
4	Ortman and Samter.	1890	M.	34	Pneumonia, few days before.	Shoulder.	Suppurative.	Arthrotomy.	R.
5	Macaigne and Chipault.	1891	F.	60	Pneumonia, 4 days before.	Right knee.	,,	,,	R.
6	Chantemesse.	1891	?	Adult	Pneumonia, crisis 2 days before.	Elbow; knee.	Serous.	Meningitis.	D.
7	Boulloche.	1891	M.	5	Pneumonia, 3 days after.	Knee; both elbows.	Suppurative.	—	D.
8	Picqué and Veillon.	1891	M.	26	Pneumonia, 4 days before.	Right knee.	,,	Arthrotomy.	D.
9	Brunner.	1892	M.	52	Pneumonia, 2 days before.	Left wrist.	,,	,,	D.
10	Juvigny.	1894	M.	52	Pneumonia.	Both knees; ankle.	,,	,,	D.
11	Dominici.	1896	M.	44	Pneumonia 12 days before.	Right shoulder.	,,	Peri- and endocarditis; meningitis; lead.	D.
12	Griffon.	1896	F.	71	None.	Right ankle.	,,	Endocarditis; meningitis; arthrotomy.	D.
13	Mercantonio.	1896	M.	71	Pneumonia, some days before.	Right shoulder.	,,	Arthrotomy.	D.
14	Oliva.	1896	M.	8	Pneumonia, 7 days after.	Arms and feet (multiple).	Serous.	Pneumococcus found in sputa only.	R.
15	Vogelius.	1896	M.	36	Pneumonia, 5 days before.	Right sterno-clavicular.	Suppurative.	Arthrotomy.	R.
16	,,	1896	M.	60	Pneumonia some days before.	Hip.	,,	Endocarditis; empyema; lead; arthrotomy.	D.
17	Schabab.	1896	M.	45	Pneumonia.	Left hip and knee.	,,	—	D.
18	Ausset.	1896	M.	41	Pneumonia 7 days before.	Both knees.	,,	Rheumatism 2 years before.	D.
19	Fernet and Lorrain.	1896	M.	56	Pneumonia.	Left sterno-clavicular; right shoulder (recovered).	,,	Endocarditis; meningitis. The arthritis of shoulder subsided before death.	D.
20	Widal and Meslay.	1896	M.	Adult	None.	Left first metatarso-phalangeal.	Suppurative.	Purulent pericarditis; lead.	D.
21	Duflocq and Ledamany.	1896	M.	32	Pneumonia 9 days before.	Both elbows; left shoulder. Right knee.	,, Serous.	Old rheumatic arthritis.	D.
22	Tournier and Courmont.	1896	M.	50	Pneumonia, 6 days before.	Left knee and shoulder.	Suppurative.	Empyema; secondary syphilis.	D.
23	Widal and Mercier.	1897	M.	46	Pneumonia, 4 days before.	Multiple, wrist and ankle.	,,	Endocarditis; typhoid arthritis 25 years before.	D.
24	Galliard and Morély.	1898	M.	44	Pneumonia, 9 days before.	Right wrist.	,,	Stiffness and grating of joint; arthrotomy.	R.
25	Widal and Lesné.	1898	M.	68	None.	Left sterno-clavicular. Left wrist.	,, (?)	Old chronic rheumatism of small joints of hands and feet.	R.
26	Petit.	1898	M.	42	Pneumonia, 5 days before.	Left knee.	Suppurative.	Meningitis; arthrotomy.	D.
27	Sorel.	1898	M.	48	Pneumonia, 8 days before.	Left shoulder.	,,	Empyema.	D.
28	Leroux.	1899	M.	45	Pneumonia, 9 days before.	Left wrist.	,,	Endocarditis; pleurisy; peritonitis; meningitis.	D.
29	Fernet and Lacapère.	1900	M.	47	Pneumonia, 3 or 4 days before.	Right wrist.	Serous.	Joint stiff.	R.
30	Readu.	1900	M.	68	Pneumonia, 15 days before.	Left sterno-clavicular. Left knee.	Suppurative. Serous.	Arthrotomy.	R.
31	Cave.	1900	M.	51	Pneumonia, 9 days before.	Left shoulder.	Suppurative.	—	D.

area of dulness was correspondingly increased. The following day the respirations were from 48 to 54 per minute, there were a troublesome, short, hacking cough and deep orange-coloured expectoration, viscid, and teeming with capsuled diplococci which stained by Gram. There were dulness, tubular breathing, and bronchophony at the left base to two inches above the angle of the scapula. On the 16th her condition had remained practically unchanged with incontinence of urine and fæces as before. The pulse was 136, the respirations were 44, and the temperature was 102·5°. She was ordered four grains of quinia salicylas every four hours. On the 20th, four days later, her general condition showed some improvement, the temperature was lower, about 100°. Pericardial friction was still loud. There were dulness and crepitatio redux at the left base. On the 25th the temperature was still about 100°. The patient was better in herself. There was a little delirium at times and she tried often to get out of bed. The delirium was not worse at night. She complained of slight vertical headache. She was quite rational at the time of examination. She took milk well. The tongue was moist, with a thin white fur. The face was rather flushed. The pupils were equal and active. The heart's apex was in the fifth space, half an inch outside the nipple-line. The impulse was still too forcible. The area of dulness was only slightly increased upwards and outwards. There was a scratching to-and-fro friction over the whole præcordial area except at the apex, where a long systolic bruit was the only sound audible. There were still some dulness and moist sounds at the left base. There were swelling, redness, and tenderness of the knuckles of the left hand, especially of the index finger, and effusion into the right knee-joint with some tenderness. The other joints were free. On March 27th the pericardial friction was much fainter and on the 30th it was no longer audible. The pains had disappeared from the joints. By April 5th she was much better, with a normal temperature for four or five days and no pain. There was no pericardial friction. A long swishing systolic bruit was the only sound audible at the apex and the second sound was accentuated at the base. The urine was now free from albumin. From this date except for a slight recurrence of pain and swelling in the joints of the right arm and hand (from April 8th to 11th) her convalescence was uninterrupted.

This case has not been included in the table as one of pneumococcic arthritis because the identification of the organism cultivated from the blood was not established by animal inoculation. Its cultured characters as tested in broth and in milk and on the surface of blood-agar and blood-serum closely resembled those of the pneumococcus, although it seemed to grow rather more freely than does the pneumococcus when recently isolated, and the colonies on agar presented a slight central opacity or haziness. No growth occurred in the cool incubator, which was kept at 21° C. Morphologically it was a diplococcus, the individual cocci also occurring singly and in short chains. The first cultures, obtained on agar with a plentiful supply of blood, showed the presence of a distinct capsule. The cocci were round or slightly oval, measuring from 0·75 to 1 μ in diameter. They were not typically lanceolate. Treated by Gram's method and stained in the aniline-gentian-violet solution or carbol-crystal-violet for from 30 to 45 seconds only, they retained the stain. The organism differed from the diplococcus isolated by Poynton and Paine by this retention of Gram's stain, by its slightly greater dimensions, and by the distinct presence of a capsule. Triboulet and Coyon, however, in describing the morphology of their diplococcus, which Poynton is inclined to regard as identical with his own, say, "*Ce microbe prend le Gram*,"[14] and, again, speaking of cultures in carbonated milk, "*il n'est pas rare de voir parfois un espace clair donnant une apparence d'encapsulement*."[15] Unfortunately the case occurred at a season of the year when professional work is heavy, and the cultures died out before an opportunity arose for more careful investigation. Still more unfortunately, working alone in a provincial town the crucial test of animal inoculation could not be applied. The case, therefore, is recorded for what it is worth as one of *severe multiple serous arthritis, with pneumonia, pericarditis, and endocarditis, not influenced by salicylate of soda, and with the presence in the blood of a diplococcus closely resembling (? identical with) the pneumococcus.*

[14] Loc. cit., p. 62.

[15] Loc. cit., p. 67.

Turning now from the consideration of these cases of arthritis in which, while the pneumococcus has been demonstrably present and active in other parts of the body, its presence has not been detected even after skilled examination in the effusion of the affected joints, and reverting to the cases analysed in the table, we find that the mortality has been high, not so much as a direct result of the arthritis, but in relation to other distributions of the pathogenic micro-organism. Of the 31 cases 23 patients died and eight recovered. In the eight recoveries are included two of the cases in which the inflammation was non-suppurative, while the remaining six were attended by suppuration. In five of these recovery ensued after incision and drainage of the joint, while in the remaining case a suppurative lesion of the sterno-clavicular joint was absorbed (the case of Widal and Lesné already referred to).

The association of the arthritis with other localisations of the pneumococcic infection is the rule, and this associated lesion is commonly in a vital part and more directly threatening to life than is the arthritis. The occurrence of pneumonia in 28 out of 31 cases has already been referred to. But often there has been a widespread infection of the system by the virus, with malignant endocarditis (six cases), pleurisy and empyema (five), pericarditis (two), nephritis (three), meningitis (six), and peritonitis (one). In some of the cases there has been a simultaneous inflammation of more than one serous membrane; thus in Leroux's case[16] the necropsy disclosed, in addition to recent endocarditis, a purulent meningitis, pleurisy, peritonitis, and arthritis. This tendency to infect more than one serous membrane at the same time is also pronounced in certain cases of tuberculous and common septicæmic infections, and the associated multiple *seritis* has recently received the name of *polyorromenitis*.[17] The morbid anatomy of the joint infected by pneumococci is essentially that of any other septic arthritis. The presence of the pneumococcus has been demonstrated in all the cases included above save one, that of Oliva, in which it was detected only in the pneumonic sputa. Its identification by chemical, morphological, and cultural characters has in most cases been confirmed by inoculation experiments, and the degree of virulence determined for mice or rabbits. The organism is found in the fluid exudation, either free or embedded in the larger cellular elements, and a thin layer of cocci may exist on the free surface of the fibrinous layer which covers the inflamed synovial membrane. The deeper parts of sections, whether of synovial membrane, cartilage, or bone, show as a rule no micro-organisms. The synovial membrane is thickened irregularly and sections stained by Weigert's method show two layers of about the same thickness; the deeper, vascular and infiltrated with embryonal cells embedded in a meshwork of connective tissue (stained pink with picro-carmine); the superficial, consisting of a network of fibrin arranged for the most part parallel to the free surface and containing leucocytes in the interstices. The leucocytes become more and more numerous towards the free surface and the fibrin less evident, except for a thin layer on the surface itself, this layer containing a number of embedded pneumococci.[18]

In mild cases or those of short duration the synovial membrane alone may be affected, with loss of polish and injection of the fringes. But in many the cartilage is partially or completely eroded and the surface of the bone is laid bare. The changes in the cartilages begin with irritative lesions of the capsules and cells, which are swollen and œdematous-looking, while in some of the cells degenerative changes may be observed with disappearance of the nuclei, the ground substance meanwhile remaining intact.[19] In the older or more virulent cases the changes are much more destructive, the ligaments and cartilages being completely destroyed, as also in some cases the articular ends of the bones. Pus may perforate the capsule and penetrate several inches along the inter-muscular planes or the sheaths of tendons. In the case of Picqué and Veillon[20] it tracked upwards from the knee for six inches along the femoral artery and downwards between the muscles of the calf. One can well understand that in cases which eventually recover the joint is often left with adhesions or

[16] Loc. cit., pp. 86–94.

[17] Cf. Dr. Frederick Taylor, Brit. Med. Jour., vol. ii., 1900, p. 1693.

[18] Macaigne et Chipault: Remarques sur deux cas d'Arthritis à Pneumocoques, Revue de Médecine, 1891, p. 749. Abstracted in the Practitioner, vol. i., 1892, p. 127.

[19] Widal, in Brouardel's Traité de Médecine, vol. ii., p. 785.

[20] Archives de Médecine Expérimentelle, January, 1891, p. 68

complete ankylosis. The milder cases with serous effusion may, however, leave behind little evidence of the preceding inflammation, and the function of the joint may be perfectly restored.

Reference has already been made to the fact that the arthritis is especially liable to be located in a joint previously damaged, whether by disease or mechanical injury. In the case herein recorded the association with a violent twist of the shoulder-joint was direct and immediate. In two other cases in the table there is the story of a fall on the affected joint shortly before the attack, in one case the shoulder and in the other the knee being affected. One patient had suffered from acute rheumatism, three from rheumatism in a chronic form, and in one of these, while the preceding rheumatism affected the knees and feet only, the pneumococcic arthritis affected the knees.[31] Two other cases were impregnated with lead, in one with the definite discovery of uratic crystals in the cartilage of the affected joint, and one patient had previously suffered from arthritis following typhoid fever. Thus, 10 cases out of 31 gave direct evidence of the situation of the infection in a previously damaged joint. This fact is of interest when we compare it with the experimental investigation of the pathogeny of the affection in animals.

To begin with, we may fairly assume, in the absence of any evidence of external inoculation of the joints, that the virus is conveyed thither by the blood, and there is ample proof of the possibility of this mode of infection. Indeed, it is notorious that in the later stages of severe pneumonia, practically in all cases that prove fatal, the pneumococcus can be directly cultivated from the blood, and the writer has succeeded in doing so in several instances. In these the natural barrier to the production of septicæmia set up by the fibrinous exudation in the alveoli has been broken through with a resulting general infection. The virus circulating in the blood stream, a medium generally unfavourable to the prolonged vitality of parasitic germs, will naturally tend to settle and develop in any part of the economy where the natural defensive mechanisms of the organism are weakened by injury or disease, that is to say, in any *locus minoris resistentiæ*. Widal thus expresses himself on this head[32] "Clinical experience supplies many instances of damage to the joints from internal disorders serving as a gathering-ground for infection. The preceding articular lesions are sometimes clearly in evidence, such as arthritis sicca or the arthropathies of tabes or syringomyelia which become infected by various organisms. Here the predisposition to infection is favoured by the nerve lesion. The experiments of M. Hermann[33] have shown that section of the sciatic nerve predisposed to the localisation of staphylococci circulating in the blood in different parts of the limb which was deprived of its innervation (joints, bone marrow, bursæ, and cicatrices). Recently Kasparek has repeated these researches with cultures of staphylococci, streptococci, and pneumococci[34] and has shown that in animals killed after intravenous injection of the culture, pus containing the injected microbe was already present in the ankle-joint and bone marrow of the tibia on the side of the nerve lesion at the end of 24 hours. In the limb whose nerve was intact, on the other hand, there was complete absence of suppuration or, at the most, the joint contained only a few micro-organisms. Most frequently, however, the explanation of this gathering-ground is not to be discovered, though in some cases careful investigation reveals an unexpected cause. Thus I have recently observed at the Hôpital Beaujon a mon-arthritis of the left first metatarso-phalangeal joint in a confirmed victim of lead impregnation who was attacked by a primary pneumococcal purulent pericarditis. At the autopsy two or three drops of sero-purulent fluid, containing pneumococci in pure culture, could be collected from the joint. By the naked eye no gouty lesion could be detected, but microscopic examination revealed the presence of crystals of urate of soda in the articular cartilages. This solitary localisation in a small joint not usually liable to infection was only apparently fortuitous. The previous uratic deposit led to the succeeding infection. In a word, in this patient attacked by pneumococcic infection the determination to this particular joint was of a 'professional' nature and should be sought in the saturnism which produced the uratic deposit." The same point, together with other details of interest, is brought out by various experiments with the pneumococcus alone. The observations of numerous investigators may be summarised as follows:—1. The injection of a virulent culture of the pneumococcus directly into a joint of a susceptible animal is almost invariably followed by acute suppurative arthritis.[35] 2. The subcutaneous injection of virulent cultures after the previous excitation of an aseptic inflammation in a joint, whether by direct injury or by the injection into the joint cavity of essence of turpentine, gives varying results, in many cases negative (Gabbi), in many positive (Ausset, Zuber). 3 The intravenous injection of virulent cultures with associated aseptic traumatism of a joint leads to arthritis much more certainly than do injections by the subcutaneous method. Finally, Bezançon and Griffon[36] have succeeded in producing an experimental pneumococcic arthritis by modifying the resistance of the animal experimented on in relation to the virulence of the pneumococcus. They find that if a rabbit is first *partially* immunised by the injection of cultures five or six days old and consequently of diminished virulence, and after a few days a full dose of a virulent culture is injected, local lesions are produced rather than a general septicæmia, and especially are these local lesions apt to appear in the joints as pneumococcic arthritis. Leroux, who has admirably summarised these experimental investigations[37] sees in this arthritis after partial immunisation a correspondence with the clinical experience that arthritis usually supervenes after a pneumonia has run its course or towards the end of an attack, when a condition of greater or less immunity has been acquired.

We can deal very briefly with the clinical characters of pneumococcic arthritis. The symptoms may vary in severity from pain and slight swelling limited to a single joint to an intense inflammatory œdema of the whole neighbourhood of the articulation or of a whole limb, with severe pain, heat, and redness, with abnormal mobility from destruction of the ligaments, and with grating of the bared surfaces of the bones. The fever is generally high (from 102° to 104°). The nature of the arthritis can be determined only by its association with pneumonia or other pneumococcic infection and by bacteriological examination of the joint contents. The prognosis is grave both as regards danger to life and the ultimate restoration of function to the joint—in the former respect on account of the extreme frequency of constitutional infection by the pathogenic organism and its characteristic localisations in the endocardium, meninges, and other tissues previously specified. In the cases that recover progress is slow, extending over many weeks, and the function of the joint is as a rule permanently impaired.

Little that is special need be said with regard to the treatment of this particular form of arthritis. In suppurative cases—which, as we have seen, comprise the majority—there can be no hesitation in practising aseptic incision of the joint with flushing, drainage, and fixation, as in any other acute suppurative arthritis. Those cases in which the effusion, drawn off by a sterilised syringe, has proved to be serous or sero-fibrinous in character have generally been treated by fixation on a splint with moderate compression by a bandage over cotton-wool. But even in cases of serous effusion it may be questioned whether an arthrotomy for the removal of the morbid products, avoiding important ligaments and tendons, would not be followed by a speedier cure and more favourable result as regards the ultimate restoration of function to the joint; while at the same time one possible source of generalised infection would be largely removed. In any case convalescence is apt to be tedious and prolonged with much stiffness and adhesion in and about the articulation. This condition must be treated on general principles, by massage, by douches and other hydrotherapeutic measures, or by hot-air baths, and when it seems necessary by forced movements of the joint; in all cases followed by suitable exercises for the restoration of wasted muscles and the preservation of the mobility that has been gained.

Bath.

[31] Ausset: Bulletin Médical du Nord, April 24th, 1896.
[32] Loc. cit.
[33] Annales de l'Institu Pasteur, April, 1891.
[34] Wiener Medicinische Wochenschrift, August 8th and 15th, 1896.
[35] Gabbi: Lo Sperimentale, 1889; Cornil, &c.
[36] Société de Biologie, July 22nd, 1899.
[37] Loc. cit., pp. 98-105.

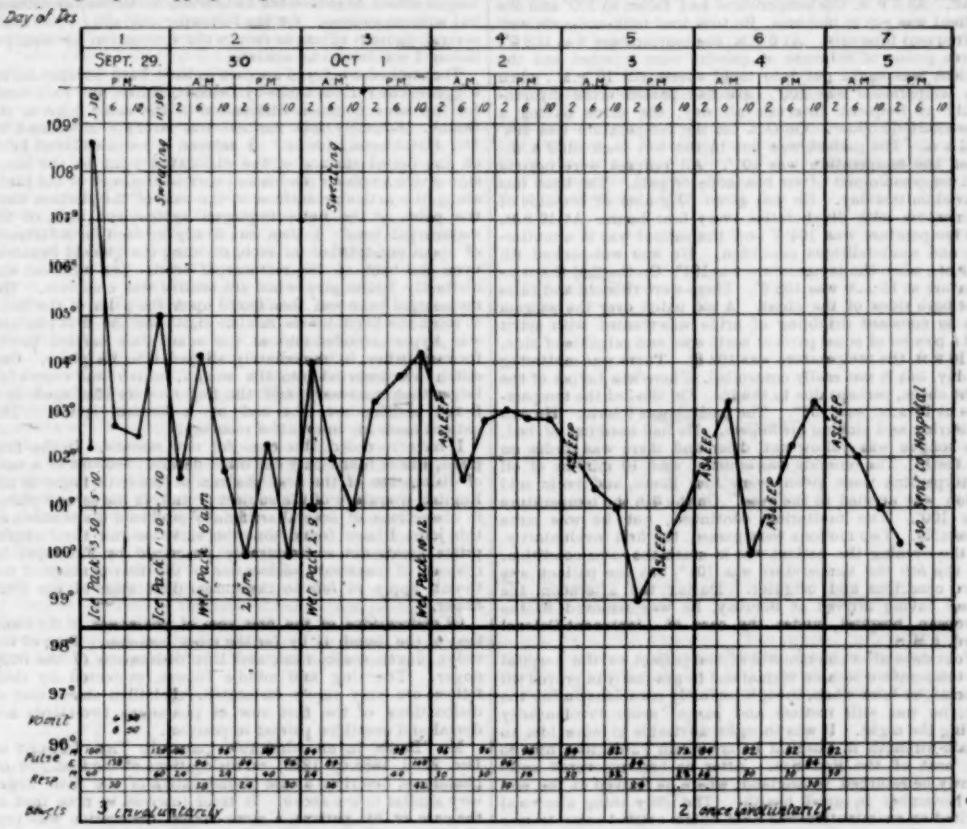
HEALTH OF CARDIFF.—The death-rate of Cardiff during 1900 was at the rate of 13·9 per 1000, which is the lowest of the recorded rates for the 33 great towns.

A CASE OF SIRIASIS.

BY A. E. GRIFFIN, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case occurred in my practice on board ship while passing down the Red Sea. I have adopted the nomenclature of Dr. Sambon and Dr. P. Manson for the condition, described under many different names, of intense pyrexia developed by prolonged exposure to a heated atmosphere, and which is not to be confounded with that of simple "heat exhaustion." Numberless theories have been propounded as to its causation and DR. Sambon in 1898 suggested that the condition was of microbic origin and he has since stated that the micro-organism has been isolated by foreign observers. In his paper he mentions the fact that stokers on large steam-vessels never show symptoms of siriasis and also suggests that the disease is contracted while coaling ship or stopping along the Red Sea coast.

On Sept. 29th the assistant engineer, a man aged 25 years, had been working in the engine room at a temperature of 114°. He was in good health ate a hearty dinner at one o'clock, went below at 2 P.M. to finish plugging a joint on the top of a boiler, where the temperature was probably 140°, came up at 2.15 P.M. and went to his cabin. At 3.30 P.M. he was found lying unconscious half out of his bunk, still in his boiler suit. When I was called I found the condition of the patient to be as follows: He was unconscious, his limbs were flaccid, his face was cyanosed, his skin was dry and burning to the touch, the pupils were pin-point, all reflexes were lost, the temperature in the axilla was 108·6°, the breathing was shallow and frequent (about 60 to the minute), and the pulse was 180, thin and small. I packed him in an iced sheet, with small pieces of ice round the chest and the neck, and applied ice to the head at 3 40 P.M., and at 3.45 P.M. I injected 20 minims of solution of digitalis over the præcordial area, repeating the same at 4.20 P.M. and again injecting 10 minims at 4.40 P.M. The temperature was taken every 20 minutes in the rectum. He reacted well. He defecated



In the case now reported there seems to be no evidence of focal lesion. The sufferer was an Englishman of good physique, temperate, and a "first-class life," but he had never been in the tropics or at sea before. He was an assistant engineer, and may therefore truly come under the above-named category. After an hour's stay at Suez, where we did not coal, we proceeded direct to Aden, having no communication with the shore meanwhile. It is interesting to note the recovery after a temperature of 108·6° F. Gihon states that there had been only two cases of recovery when the temperature had reached 109°, and seven when 108° and over had been registered out of the several hundreds of cases recorded in America. In the case which I am about to describe I followed Chandler's treatment, as recorded by Manson.

three times involuntarily during the first half hour. The corneal reflex returned at 4.40 P.M. when the temperature had fallen to 104°, the pulse being 122, and the respirations 30. At 5.10 P.M. he moved his arms and legs and became semi-conscious, and as the temperature was then 102·2°, the pulse 120, and the respirations 30 he was removed from the ice-pack, and placed in blankets. At 5.30 P.M. there were paroxysmal movements of the arms and legs. At 6.10 P.M. the temperature was 102·8°, the pulse was 138, and the respirations were 30. The patient was then cold-sponged. At 6.30 P.M. he vomited a large undigested meal, with much frothy mucus, and at 6.50 P.M. he again vomited. At 8 P.M. there were slight convulsions of the limbs. At 9 P.M. the temperature was 103°, the pulse was 120, and the

respirations were 40. The reflexes had returned but they were exaggerated, and it was noted that the chin was turned to the left and the angle of the mouth to the right. At 10 P.M. he showed signs of sweating, and at 11.30 P.M. he was sweating profusely, but the temperature had risen to 105°, the pulse remained at 120, and the respirations had risen to 60. He was again put into the ice-pack till 1.10 A.M. (Sept. 30th), when the temperature had fallen to 101·6°, the pulse to 96, and the respirations to 24, and there was much less cyanosis. He slept till 2.30 A.M., when he spoke for the first time, and again there was profuse sweating at 4.45 A.M. At 6 A.M. the temperature was again 104·2° (in the axilla), with a hot and dry skin, and the patient was wrapped in tepid sheets and ice was applied to the head. At 10 A.M. the temperature was 101·8°, the pulse was 96, and the respirations were 24. He was now seen by Major Hojel, I.M.S., and Dr. Miley of the Coolie Emigrant Service, in consultation. He was then conscious, answered questions said he had no pain, and wanted to sleep. Five grains of calomel and five grains of sulphate of quinine in solution were injected hypodermically and an ice-bag was applied to the head. At 2 P.M. the temperature had fallen to 100° and the patient was put in blankets. He took iced milk-and-soda well at frequent intervals. At 6 P.M. the temperature was 102·4°. Three grains of sulphate of quinine were injected and the patient was again put into tepid sheets till 10 P.M., when the temperature was 100°. He had passed urine involuntarily at frequent intervals all day, the urine having a characteristic odour. On Oct. 1st the temperature was 104° at 2 A.M. The patient was put in the wet pack till 9 A.M., when the temperature was 101°. All reflexes were normal and he complained of no headache or pain. The head was shaved on this day. He was given 20 grains of bromide of ammonium with diaphoretics every four hours. At 10 P.M. the temperature was 104·4° and the patient was in a muttering and semi-delirious condition. He was wet-packed till 12 P.M., when the temperature was 101°. On the 2nd the temperature at 10 A.M. was 102·8°. There were rhonchi and râles over both sides of the chest. A red patch over the sacrum due to constant dribbling of urine was treated with spirit and a powder of equal parts of boric acid and sulphate of zinc. At 10 P.M. the temperature was 102·8°. There was muttering all day, but it was easily controlled. There was herpes of the right cheek, perhaps due to the ice. On the 3rd the temperature at 10 A.M. was 101°. The patient was icteric. He was muttering and picking his fingers. He had been out of bed. His tongue was yellow and drier and there was sordes on the teeth. The bromide was omitted, and 10 minims of oil of turpentine were given every four hours, and boric acid lotion was applied to the eyes. On the 4th the temperature was 100°. The muttering continued, but he was more amenable. Two motions were passed, the first involuntarily. In the evening the patient was in much the same condition. On the 5th the temperature was 101°, but the patient was more conscious and brighter. During the afternoon, the vessel having arrived at Bombay, he was removed to the European hospital, under the care of Lieutenant-Colonel Boyd, I.M.S.

Four days after the removal of the patient to the hospital the temperature became normal and he gradually improved till a fortnight later when, though perfectly conscious during the day, he was still restless and passed urine involuntarily during the night. It was thought advisable to leave him to regain strength in hospital before again subjecting him to the heat of the Red Sea. After he had recovered sufficiently he returned to England, where he arrived at the end of November in good health. The only thing abnormal elicited on examination was that there existed some tremor of both the upper and lower extremities. The knee-jerks were under normal, that of the left being comparatively more active than that of the right.

Bibliography.—H. C. Wood: Thermic Fever or Sunstroke, 1872. H. C. Bastian: Paralysis, Cerebral, Bulbar, and Spinal, 1886. Davidson: Hygiene and Diseases of Warm Climates, 1893, p. 693. Twentieth Century Practice of Medicine by A. L. Gibon, vol. iii. (1896), p. 251. Allbutt: A System of Medicine—"Isolation" by Sir J. Fayrer, p. 491, 1896. Brit. Med. Jour., 1898, p. 744: Remarks on the Etiology of Sunstroke by L. W. Sambon. Journal of Tropical Medicine, 1899, vol. iii., p. 131—British Medical Association, report of Discussion on Thermic Fever, &c. Patrick Manson: Tropical Diseases, second edition.

CARDIFF INFIRMARY.—£6300 have been collected during the past six weeks towards defraying the adverse balance of the Cardiff Infirmary, which amounts to £11,000.

DORSAL DISLOCATION OF THE FIRST PHALANX OF THE LITTLE FINGER;

REDUCTION BY FARABŒUF'S DORSAL INCISION.

BY HAROLD L. BARNARD, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE LONDON HOSPITAL.

ON May 12th, 1900, my house surgeon, Mr. Meredith, told me that he had admitted to the Seamen's Hospital an engineer's fitter, aged 19 years, with a backward dislocation of the first phalanx of his left little finger. He had been standing with his hand resting upon an iron plate so that the head of the metacarpal bone of his little finger was placed over a hole in the plate. A heavy hammer had then fallen upon the back of his hand driving the head of the metacarpal bone downward and completely dislocating the first phalanx backwards. On the same night Mr. Meredith made prolonged efforts to reduce the dislocation under deep anæsthesia but without success. On the following day, after I had made several vigorous efforts to reduce the dislocation by manipulation, I was forced to operate.

The method employed appears to have been independently suggested at various times by Desault, Hulke, and Farabœuf, for the more common dislocation of the same joint in the thumb. Recently this method was strongly advocated by Mr. Hutchinson, junior.[1] I entered a narrow-bladed knife on the dorsal surface of the dislocated joint to the ulnar side of the extensor tendon and carried the back of the blade along the articular surface of the base of the phalanx until the point of the knife impinged against the back of the metacarpal bone. I then cut firmly upward for a distance of about one-third of an inch, dividing the glenoid ligament upon the back of the metacarpal head. The ligament was distinctly felt to give when the section was complete. The metacarpal bone was then flexed upon the palm of the hand to relax the flexor brevis minimi digiti and the first phalanx was hyper-extended and at the same time carried bodily forward, when it immediately slipped into its place. One stitch was inserted into the wound, which was somewhat larger than necessary, and the fingers were bandaged in a flexed position over the end of a forearm splint. The patient made an uneventful recovery.

I have recorded this case for two reasons. In the first place, I have found only one other detailed account of a case of dislocation of the first phalanx of the little finger in the English literature of the subject;[2] and, in the second place, in dissections of several artificially-produced dislocations of this joint I have found that the varieties and their appropriate treatment so admirably described by Farabœuf in the case of backward dislocation of the first phalanx of the thumb apply *in toto* to the similar dislocation of the little finger.

Of dislocations of the first row of phalanges in the hand that of the thumb is by far the most common. That of the index finger comes next, and then dislocation of the little finger. The ring and middle fingers, protected by their fellows are very rarely dislocated. Poisilion states that of dislocations of the first row of phalanges two-thirds are dorsal and one-third palmar in position.

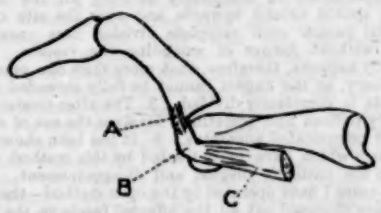
Mr. Battle in an admirable paper in THE LANCET of Dec. 22nd, 1888 (p. 1223), on dislocations of the first row of phalanges, describes a case of dislocation of the little finger very similar to the above. It is of interest to note that in the case of his patient, a stone-mason, dislocation was produced by a stone falling upon the back of his hand. Reduction was, however, effected by manipulation. In another case of Mr. Battle's the first phalanx of the index finger was dislocated by a blow upon the back of the hand with a broomstick. On the other hand, dislocation of the first phalanx of the thumb is more often produced by falls upon the palm of the hand. We may, therefore, distinguish those dislocations in which the head of the metacarpal bone is driven forward by violence applied to the back of the hand from those in which the first phalanx is driven back by force applied on the palmar aspect. The hand is mechanically in continuity with the radius and not with the ulna, and this would appear to explain why this dislocation is so

[1] Brit. Med. Jour., Jan. 15th, 1898.
[2] Battle: THE LANCET, Dec. 22nd, 1888, p. 1223.

much more common on the radial than on the ulnar side, for in the frequent accident of falling upon the outstretched hand the strain is borne by the radial digits. In this common accident the phalanx is driven back, but on the ulnar side, when dislocation occurs, it is due, as we have seen in two cases, to the head of the metacarpal bone being driven forward.

The anatomical arrangement of tendons, bones, but more especially of ligaments, which makes reduction of the first phalanx of the thumb so difficult in some cases is represented by analogous structures in the little finger, and the ingenious methods recommended by Farabœuf for overcoming these obstructions in the thumb are applicable to the little finger. The tendon of the flexor longus pollicis having slipped off the head of the metacarpal bone, usually upon the ulnar side, has been supposed by some surgeons to clasp the narrow neck of the bone and thus to cause the great hindrance to reduction. In dislocations of the little finger artificially produced I found that the flexor sublimis and profundus tendons slipped to the radial side of the metacarpal head in a similar manner. In neither case, however, does it appear at all likely that difficulty in reduction is due to the hitching of slippery tendons on the rounded head of the bone. Others have held that the hindrance to reduction was due to the globular head of the bone passing forward between the heads of the flexor brevis pollicis which then clasped the narrow neck tightly as the muscle spasmodically contracted, and they supposed that the two sesamoid bones made matters worse by locking into the grooves on either side below the head. This button-and-buttonhole theory suggested the treatment by tenotomy of the outer head of the flexor brevis pollicis and even of both heads where tenotomy of one was not successful. In the little finger the equivalent structures are the two heads of the flexor brevis minimi digiti and the globular head of the metacarpal bone, and these might be supposed to produce equivalent effects, although sesamoid bones are not, as a rule, present in the tendons of insertion of the short flexor of the little finger. Farabœuf, however, basing his opinion on an examination of 100 artificially produced dislocations of the first phalanx of the thumb, taught that although the tendons and sesamoid bones formed the larger part of the constricting ring or button-hole around the metacarpal neck, yet it was the glenoid ligament which was the real obstacle to reduction and that a vertical section of this ligament would at once permit the metacarpal head to slip back from between the heads of the flexor brevis pollicis. The bases of the first row of phalanges are much smaller than the articular surfaces on the heads of the metacarpal bones, so that they can articulate with only a small part of these surfaces at any one time. To supplement this deficiency of articulating surfaces on the phalangeal side a dense apron of fibrous tissue is prolonged forward from the anterior edge of the base of the phalanx to which it is firmly attached. The upper edge of this glenoid ligament is loosely fixed to the front of the neck of the metacarpal bone; on either side it blends with the tendons of insertion of the small muscles passing to the tubercles on the bases of the phalanges and in this part of the ligament in the case of the

FIG. 1.



Incomplete dislocation of the first phalanx of the thumb. A, Glenoid ligament. B, Sesamoid bone. C, Flexor brevis pollicis. (Farabœuf.)

thumb the sesamoid bones are found. In short, the glenoid ligament is formed of dense transverse fibres binding together the tendons of the short muscles passing to the bases of the first row of phalanges. When dislocation occurs the phalanx as it passes back carries this apron with it and tears it from its upper attachment. The head of the metacarpal bone passes forward through the rent above the ligament and the sharp, torn edge of the glenoid ligament clasps the neck of the bone firmly behind.

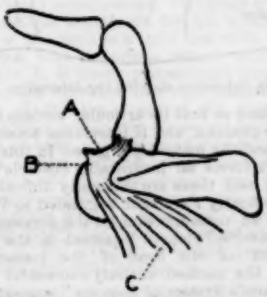
Farabœuf distinguished in the thumb incomplete from complete dislocations and he divided the complete dislocations into simple and complex. In my dissections I have found all these varieties represented in the little finger. In the incomplete dislocations (Fig. 1 and Fig. 2) the glenoid ligament is still in contact with the posterior part of the

FIG. 2.

The same showing deformity. (Farabœuf.)

articular surface of the head which has not entirely passed through the rent in the front of the capsule. The lateral ligaments are not ruptured. Reduction is effected easily by pushing the phalanx forward and the head back. In simple complete dislocations (Fig. 3 and Fig. 4) the lateral liga-

FIG. 3.



Complete simple dislocation of the first phalanx of the thumb. A, Glenoid ligament. B, Sesamoid bones. C, Flexor brevis pollicis. (Farabœuf.)

ments are, as a rule, ruptured. The crucial point of this variety is, however, that the glenoid ligament retains its normal relations to the phalanx and extends forward in continuity with the articular surface on the base of the phalanx.

FIG. 4.

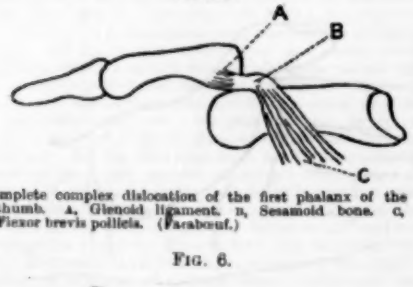
Complete simple dislocation showing the deformity.

The articular cartilage on the phalangeal base rests directly upon the back of the metacarpal bone. This dislocation can be reduced by Farabœuf's method of manipulation. The metacarpal bone is flexed into the palm of the hand, so as

to relax the short flexor. The first phalanx is then hyperextended and carried bodily forward.

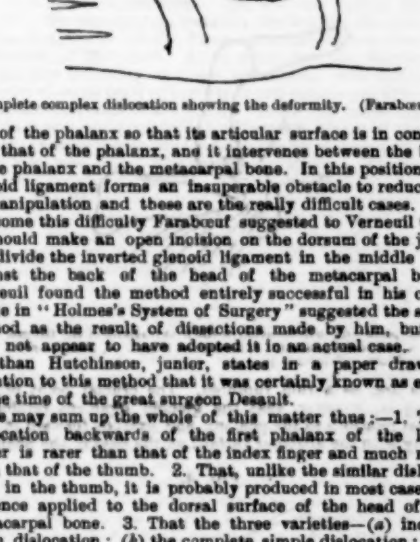
Complete complex dislocation was considered by Farabœuf to be the result of ill-directed and violent attempts to reduce a complete simple dislocation by manipulation. In this form (Fig. 5 and Fig. 6) the glenoid ligament is tucked under the

FIG. 5.



Complete complex dislocation of the first phalanx of the thumb. A, Glenoid ligament. B, Sesamoid bone. C, Flexor brevis pollicis. (Farabœuf.)

FIG. 6.



Complete complex dislocation showing the deformity. (Farabœuf.)

base of the phalanx so that its articular surface is in contact with that of the phalanx, and it intervenes between the base of the phalanx and the metacarpal bone. In this position the glenoid ligament forms an insuperable obstacle to reduction by manipulation and these are the really difficult cases. To overcome this difficulty Farabœuf suggested to Verneuil that he should make an open incision on the dorsum of the joint and divide the inverted glenoid ligament in the middle line against the back of the head of the metacarpal bone. Verneuil found the method entirely successful in his case. Hulke in "Holmes's System of Surgery" suggested the same method as the result of dissections made by him, but he does not appear to have adopted it in an actual case. Mr. Jonathan Hutchinson, junior, states in a paper drawing attention to this method that it was certainly known as early as the time of the great surgeon Desault.

We may sum up the whole of this matter thus:—1. That dislocation backwards of the first phalanx of the little finger is rarer than that of the index finger and much rarer than that of the thumb. 2. That, unlike the similar dislocation in the thumb, it is probably produced in most cases by violence applied to the dorsal surface of the head of the metacarpal bone. 3. That the three varieties—(*a*) incomplete dislocation; (*b*) the complete simple dislocation; and (*c*) the complete complex dislocation, so admirably described by Farabœuf in the case of the thumb—apply equally to the little finger. 4. That the incomplete dislocation is easily reduced by pushing the phalanx forward; the complete simple form by the method of manipulation suggested by Farabœuf; whilst the complete complex dislocation, the result of ill-directed manipulation, requires the simple operation suggested by Desault, Farabœuf, and Hulke.

Upper Wimpole-street, W.

LITERARY INTELLIGENCE.—Messrs. J. & A. Churchill announce that the "Manual of Anatomy" which the late Professor Alfred Hughes was writing will be published in due course. A large portion of the work was ready before Professor Hughes left for South Africa and it will now be completed and seen through the press by Mr. Arthur Keith, joint lecturer on anatomy at the London Hospital. Many of the illustrations will be from drawings of the well-known dissections exhibited by the late professor.

THE TREATMENT OF DUPUYTREN'S CONTRACTION AND OTHER POINTS IN THE SURGERY OF THE HAND.[1]

BY A. H. TUBBY, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO WESTMINSTER HOSPITAL; SURGEON TO THE NATIONAL ORTHOPÆDIC HOSPITAL; SENIOR SURGEON TO THE EVELINA HOSPITAL FOR CHILDREN.

CONTRACTION of the palmar fascia, or "Dupuytren's contraction," is an affection of insidious onset and slow but sure progress. It so deforms the hand as to seriously interfere with its integrity, and once started it progresses steadily until one or more fingers are brought down and held firmly flexed into the palm of the hand. Beginning usually in the ring finger it spreads to the middle and the little fingers and not seldom to the index finger. Thus, in a patient who came to me recently in the right hand the ring and middle fingers were affected, in the left hand all four fingers, the ring finger in both hands being the most involved. The site of commencement of the thickening of the palmar fascia is generally at the deepest part of the palm of the hand—namely, the transverse crease near the base of the ring finger. From this spot the thickening or induration spreads upwards towards the wrist and downwards towards the fingers. As a rule it affects the lateral prolongation of the fascia on the fingers and occasionally, as in a case I saw recently, the central portion of the digital prolongation is affected.

The exact causes of the induration and contraction of the palmar fascia have never been decided, but there are certain points which stand out quite clearly—viz.: (1) it is more common in the male sex than in the female sex; (2) it is met with generally after 40 years of age; and (3) a large number of the patients who suffer from it have a gouty history. In this connexion it might be mentioned that Mr. C. B. Lockwood found crystals of urate of soda deposited in the affected structures. The question of traumatism is somewhat difficult to speak of, for about 50 per cent. of the patients can trace the onset to a slight injury or repeated rubbing of the palms; whereas, on the other hand, many patients have never been subjected to any manual labour. Therefore the exact cause must remain in doubt unless we are prepared to favour the late Mr. William Anderson's theory that the affection is bacterial in origin and that micro-organisms find their way into the fascia through a wound in the palm. Unfortunately, however, no bacteria have been demonstrated, yet as a fact of some interest we may recall the existence of bacteria or micro-organisms in warts on the hands.

For treatment it has been usual to adopt the method first practised by the late Mr. William Adams of multiple subcutaneous division by a fine tenotome of all the contracted bands of the palm of the hand and of the fingers. This method is fairly successful but it has certain disadvantages. These are as follows: 1. The difficulty often experienced of completely dividing all the bands. If these should extend upwards and over the site of the superficial palmar arch complete division here cannot be effected without danger of wounding the vessels. 2. It frequently happens, therefore, that more than one operation is necessary, as the fingers cannot be fully extended unless the fascia is completely divided. 3. The after-treatment is decidedly tedious and sometimes involves the use of expensive and complicated apparatus. 4. It has been shown that some cases which have been treated by this method recur, much to the patient's disgust and disappointment. So in suitable cases I have operated by the open method—that is to say, I have dissected out all the affected fascia in the palm. It is, however, necessary to carefully select the patient. The urine should be examined for albumin and for sugar, and the patient should be in good health, spare, and one apparently possessing good healing power. The advantages of operating by the open method are as follows. 1. All the affected fascia in the palm can be completely removed and there is no liability to recurrence. A gentleman, aged 66 years, in good health, on whom I operated five years ago by this method, has never shown the slightest sign of trouble and the palm is as soft and flexible as it is possible for it to be. And if

[1] A paper read before a meeting of the British Orthopædic Society on Oct. 13th, 1900.

there be any truth in Mr. Anderson's bacillary theory the best treatment is to get rid of the whole affected part as soon as possible. 2. By the open method treatment is shortened, for as soon as the wound in the palm is firmly healed the use of splints can be discontinued. 3. No expensive apparatus is necessary, thin narrow malleable iron splints being all that are required. Certain disadvantages have been urged against the open method. Firstly, it involves a prolonged dissection, but in itself to a skilled operator this is not a matter of great moment; and secondly, while removal of the indurated fascia in the palm is easy by dissection it is not possible to dissect it out off the sides of the fingers except in strictly localised bands; and, thirdly, if for any reason the hand should go septic after the operation the results are disastrous. It is quite possible, however, that such an event might happen in operating by the older method.

The measures adopted are as follows. The hand is made absolutely aseptic by all the most approved methods and to this point, if the surgeon decides to operate by dissection, he must attend himself and not delegate it to a subordinate or to a nurse; for this is the essence of the whole business and any want of care and forethought in this particular will end in disaster. The same remark applies to instruments and to the accessories. As an anæsthetic I prefer chloroform or the A.C.E. mixture, avoiding ether whenever possible because of the increased hæmorrhage associated with it. An Esmarch's bandage is previously placed around the upper arm so as to prevent the otherwise free oozing from obscuring the field of operation, and the incision is then made vertically over the most prominent band of fascia, extending from the position of the superficial palmar arch to the root of the finger. In extensive cases this incision can be enlarged by carrying out transverse cuts at either end. The dissecting back of the flap of skin is difficult without button-holing it. What happens is that the thickened epidermis peels away from the cutis vera while the latter is attached very firmly by numerous fibrous prolongations to the fascia beneath. Then, too, if the fascia is nodular it often happens that the skin is exceedingly thin, so that great care must be taken in dissecting it away, but it must be turned back as far as the limits of the affection. The next point is the removal of the fascia. Before doing so it is well to define the digital vessels and nerves as they emerge from the divisions and trace them back by cutting through the thickened fascia towards the wrist. The affected structures can now be easily removed and often the finger or fingers can be straightened. In those cases where the fingers are involved a small fine tenotome is passed between the skin and the bands on the lateral aspects and the fibrous tissue divided. An important point is the arrest of hæmorrhage. The Esmarch bandage should be released and whatever oozing occurs should be checked by pressure or by the application of hot sponges. If any arteries spurt it is most advisable to use torsion to check them and not to put on ligatures, for these are apt to give rise to trouble in healing. The application of sutures should be careful and the material to be used is horse-hair. If it happen when the fingers are straightened that there be a hiatus of skin at their roots I have several times performed a small plastic operation and slipped down a little skin to cover up this spot. Sal alembroth dressings are then used and rigid asepsis must be continued until every scab has disappeared. In one of my patients whom I warned on this point considerable trouble followed from neglect. He was a sea-captain and finding that the palm was all but well he took off the dressing and proceeded to climb up the side of the ship by a rope, knocking off a small scab. Acute œdema and trouble in the palm of the hand followed with considerable stiffness and gave him much inconvenience for four months. Subsequently the whole matter settled down and the patient's hand is as good as it can possibly be. The question will arise, Should the hand be put up at once in the straight position? If there is much contraction of the fingers it is better not to do so, because of the pain which arises from stretching of the digital nerves which have become structurally shortened while the finger contracted downwards.

On the whole, then, in suitable cases removal by the open method with the aid of aseptic surgery is a quick and thorough method of dealing with this deformity.

CLUB-HAND.

This is a comparatively infrequent deformity and is almost always congenital. During the last 10 years I do not think that I have seen more than 15 cases and they were mostly unilateral. In some of them the child was born prematurely and there were defects elsewhere. For so unusual a deformity the classification adopted is somewhat intricate, but it is analogous to that of club-foot. The hand may deviate either externally or internally and be either flexed or extended. Hence there are radial and ulnar club-hand and palmar and dorsal club-hand. But it is not often that the deformity is simple, and mixed deviations occur; so that radio-palmar, radio-dorsal, ulnar-palmar, and ulnar-dorsal forms are seen. Morphologically the cases may be grouped thus: 1. The skeleton is complete and otherwise well formed and the malformation consists in a modification of the relations of the articular surfaces and in an abnormal inclination of the line of the joint. 2. The skeleton is complete, but deformed in parts, the radius is often shortened and the carpal bones atrophied. This is the most usual variety. 3 The skeleton is incomplete and deformed. The radio-palmar varieties are generally of this group. There is an absence of one or more bones of the metacarpus or of one of the bones of the forearm. When the radius is absent the ulna is shortened, increased in size, and much curved. The carpal articulation is abnormal and there exist in it numerous fibrous bands and tendons which are in no way related to normal structures. Frequently other irregularities are present in the body, such as absence of groups of muscles or vascular and nerve defects.

Unfortunately, the deformity does not admit of very successful treatment. Passive movements and massage are of service when the patient is young and they are valuable in preventing aggravation of the deformity by contraction of the tendons on the concave aspect of the wrist. Various apparatus have been devised with the object of rendering of the hand useful, but they are not very satisfactory, and the patient can use the hand in many cases to better purpose unfettered by any contrivance. Tenotomy is also of service, and those tendons should be divided which interfere with the placing of the hand in a right line with the forearm and care be taken that important vessels and nerves are not wounded. Dr. L. M'Gurdy planned and carried out the following ingenious operation in a radio-palmar deformity with hypertrophy of the lower end of the ulna. He made an incision obliquely across the forearm, beginning upon the dorsum and passing obliquely upwards to the flexor aspect. The tendons on the radial side were tenotomised, the lower end of the ulna was divided obliquely, and to the outer part the semilunar bone was connected with silkworm-gut. In many of the cases which I have seen I have been content to divide the contracted tendons and to gradually improve the position of the hand by massage, passive movements, and a retentive malleable iron splint.

ON THE PROGNOSIS OF TENDON DIVISION AND SUTURE IN THE HAND.

Cases are frequently occurring in surgical practice where division of the tendon has taken place in the hand and failure of complete union followed even after the most careful suture. This is not a mere matter of chance, but it is dependent on certain well-ascertained facts Some of these are the following: (1) the index of tension at which the muscle and tendon are set—i.e., their powers of retraction; (2) the limitation of retraction of the tendon by bands of fibrous tissue binding it in its grooves; and (3) the character of the structures at the spot where division of the tendon occurs—e.g., if division is made where the tendon is surrounded by vascular areolar tissue, plentiful formation of fibrous tissue takes place and the tendon unites despite considerable retraction of the divided ends. It therefore becomes necessary to remember the foregoing three points in forming a prognosis as to the results of tendon-division.

Bearing those points in mind, the seat of election of purposeful division of a tendon for contraction can be determined. It may be of service to give examples. If the extensor tendons of the fingers are severed better results can be expected than in the case of the flexors owing to the closer attachment of the former to the sheaths, the integument, and to one another. But the retraction is greater when division occurs above the wrist than below it. The extensors of the thumb frequently suffer in wounds of the hand. If they are divided at the back of the wrist they retract only about 1 centimetre, as they are more or less bound down by periosteum and good union occurs, but if the division takes place over the metacarpal bone the central end will retract three or four times as much, as the

tendons play freely in the sheath, and the latter is very loosely attached to surrounding structures, so that good union is rare. When the wound is at the metacarpal phalangeal articulation of the thumb the prognosis as to healing is good, for the tendons are bound down to the capsule of the joint and cannot retract even though the joint has been opened.

The flexor tendons, if divided at the wrist-joint, retract very considerably, but the superficial ones less so than the deep, for the former lie in tubes of fasciæ; yet better union occurs here than in the palm of the hand, because the neighbouring structures are more vascular and a good uniting bond of tissue is thrown out. A most important point is to keep the wrist fully flexed for at least four weeks after the accident and then gradually bring the hand into the straight position, taking at least a month to do so. In any operation on the flexor tendons of the hand and fingers the wrist is the seat of election, as it is more likely that new tendon formation will follow, and the exact length of this can be graduated by carefully controlling the position of the hand on the forearm. A recognition of these points is of importance in the treatment of contracted hand for spastic paralysis.

Weymouth-street, W.

LOSS OF THE LEFT FOREARM BY AMPUTATION; DEATH 49 YEARS THEREAFTER; NECROPSY; LOCALISED AREA OF ATROPHY AT THE BASE OF THE RIGHT SECOND FRONTAL GYRUS.

BY PEERS MACLULICH, M.D. DUB.,
ASSISTANT MEDICAL OFFICER, JOINT COUNTIES ASYLUM, CARMARTHEN;
AND
EDWIN GOODALL, M.D. LOND.,
MEDICAL SUPERINTENDENT, JOINT COUNTIES ASYLUM, CARMARTHEN.

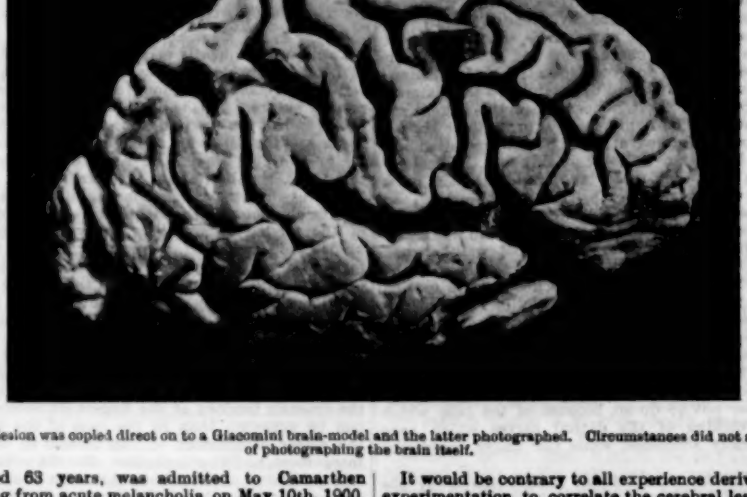
IN the following case we were fortunate enough to get a necropsy and within a few hours of death.

A male, aged 63 years, was admitted to Camarthen Asylum suffering from acute melancholia on May 10th, 1900. The heart was found clinically to be much atrophied. He died suddenly from angina pectoris on May 17th. A post-mortem examination was made 13 hours after death. The cause of death was degeneration of the cardiac muscle.

On admission the patient was found to have undergone amputation of the left forearm just below the elbow-joint (very high up). He had a considerable range of movement in the left upper arm and he used the mutilated limb for holding objects against his side. The history was that when between 13 and 14 years of age a cart went over his left forearm, necessitating amputation. Up to within three years of admission he had been healthy in mind; he first began to show change then, but was not incapacitated. He was of ordinary intelligence and his occupation was that of a post-master and insurance agent at a village. There had never been any fits or convulsive movements. A few days before admission he began to show symptoms of acute melancholia.

At the necropsy, on removal of the pia mater, a patch of softening, roughly oblong, about one and a half centimetres in length and from three-quarters to one centimetre in breadth, was found occupying the grey matter of the brain at the base of the second right frontal gyrus, where it joins the ascending frontal. (see figure). It was ochre-coloured. The disorganised tissue was extremely thin and wrinkled, evidently wasted. The lesion looked old, although there was no sclerosis. The subjacent white matter did not appear changed to the naked eye. No lesions were found at any other part of the brain, which was of good consistence. The basal vessels were atheromatous but not at all strikingly so.

The question of interest in this case is whether the shrivelled and softened area in the right cerebral hemisphere bore any relationship to the loss in early years of the left forearm; whether the deprivation in function resulting from such loss had caused the cortical wasting. The area of wasting and softening was well in front of the recognised area for the arm, hand, and fingers, which (as is well known) are placed in the central gyri behind the second and, to some extent, behind the third frontal gyri. As Oppenheim points out,[1] the extent to which the motor region embraces the portions of the frontal (and temporal) lobes bordering upon the motor zone proper (central gyri, paracentral lobule) is doubtful. In all probability the most posterior part of the three anterior frontal gyri must be reckoned in man as well as in the lower animals to the motor region. These outlying parts, however, probably play a subordinate rôle in comparison with that which is to be ascribed to the motor area proper.



The lesion was copied direct on to a Giacomini brain-model and the latter photographed. Circumstances did not allow of photographing the brain itself.

It would be contrary to all experience derived from animal experimentation to correlate the cerebral lesion in this case with the loss of the hand and forearm, on account of the forward position of the lesion. It must be remembered that

[1] Lehrbuch der Nervenkrankheiten, Berlin, 1898.

experience based upon observation in the human being is very meagre. It is curious that such a lesion existed in such clinical conditions, there being no other focus of disease in the brain. That such an isolated lesion, occupying the grey matter, should be due to atheroma is highly improbable.

Carmarthen.

A CASE OF
CHRONIC INVERSION OF THE UTERUS OF SEVEN MONTHS' DURATION SUCCESSFULLY TREATED BY AVELING'S REPOSITOR.

BY THOMAS OLIVER, M.D. GLASG., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

ACUTE inversion of the uterus, if not restored, is said by some authors to be usually fatal. Under all circumstances it is a serious accident. My experience of inversion of the uterus has been gained in consultation with medical friends shortly after parturition in patients, in whom when an anæsthetic has been administered and the exposed surface of the womb has been rendered thoroughly antiseptic, I have had little difficulty in reducing the displacement. On the other hand, I have reported the case of a womb inverted for 18 years becoming malignant; so that, while inversion of the uterus is at all times a serious mishap, there is apparently a certain percentage of women who, once they get over the immediate effects of acute inversion, can go through life with the organ turned inside out without experiencing more than inconvenience.

Of the three different stages into which inversion of the uterus is divided I need not give a lengthened description. They are briefly (1) where the fundus uteri does not come through the os externum; (2) where part of the inverted organ escapes beyond the os; and (3) where the whole womb along with the cervix is inverted.

"Chronic inversion" is the term applied to an acute inversion that has not been reduced or to a displacement which has been slowly brought about by conditions apart from parturition Inversion, however, is mostly a sequence of parturition and is due to an enlarged and relaxed uterus with well-dilated cervix, upon the fundus of which pressure has been exerted during violent straining, or there has been a precipitate labour and a short umbilical cord, or the accoucheur has pulled too firmly upon the cord while the placenta is still adherent to the uterine wall. Its occurrence after a confinement is usually accompanied by a great amount of shock to the patient and by considerable hæmorrhage. The diagnosis is made by there being no longer felt any fundus above the pubes and in the worst forms by observing the inverted organ, in the form of a globular tumour of the size of a cocoanut, lying between the woman's thighs. The proper treatment at once suggests itself—viz., to replace the uterus under an anæsthetic, having previously taken all antiseptic precautions.

Opinion is divided as to whether if the after-birth is still adherent to the uterus it should be peeled off before attempting to reduce the inversion or whether the uterus should be reduced first and then the placenta removed. It is certainly easier to reduce the inverted organ without the attached placenta, but in peeling off the placenta before replacing the uterus there is often very profuse bleeding. Once the womb is restored the vagina is packed with iodoform gauze. Even where the uterus has been completely inverted after parturition for two or three days and its internal surface has become grey and unhealthy, the discharge escaping from it foul, and the temperature high, yet under thorough antiseptic precautions I have had excellent results notwithstanding the extremely anæmic condition of the patient from loss of blood.

Most of the cases of acute inversion of the uterus are successfully treated at the time; some of the patients, on the other hand, die, while in a few the womb remains inverted. For the present I need only mention that inversion may be also due to a myoma that has passed through a dilated cervix and dragged the interior of the womb down too. Just as hæmorrhage is a symptom of acute inversion, so, also, is it common in chronic inversion. In this form the symptoms are recurrent hæmorrhage along with pain, a sense of dragging, and great discomfort.

A married woman, aged 24 years, was sent to me on Nov. 14th, 1900, by Mr. E. C. Drake of Spennymoor, complaining of pain in the lower part of the abdomen, of frequent losses of blood, and of what she believed to be the womb protruding through the vulva. She stated that she had been confined of her second child on May 1st, 1900, and that a midwife had attended her. The labour was easy and the after-birth came away readily without any traction having been made upon the cord. A few hours after delivery she passed a large clot which was followed by the rather sudden descent of the womb itself, accompanied by a very free escape of blood. Three days after this accident Mr. Drake was called in. Finding the uterus inverted and the patient very ill he tried to replace the organ, but only with partial success; nor was a second attempt the day after followed by any better result. The patient refused to allow any further efforts at restoration to be made and by degrees she recovered from the collapse and from the continuous bleeding. Her recovery, if it ever could be called such, was incomplete, for she began to have recurrent hæmorrhage which at times was rather profuse, and she became unable to attend to her domestic duties. At her menstrual periods the inverted uterus protruded further out of the vulva than in the intervals. She was in great pain and was so inconvenienced by the inverted uterus that she begged to be relieved. The patient was a slim woman and extremely pale and haggard-looking. The heart, the lungs, and the kidneys were healthy. On examination per vaginam the canal was found to be occupied by a pyriform tumour which was felt projecting through a widely dilated os uteri. The narrowed part of the tumour could be traced up inside the os and was found to be continuous with all that remained of the lower segment of the uterus. The sound passed up by the side of the tumour through the os for three-quarters of an inch. As the patient was of rather a spare build the hand could be driven well down into the abdominal cavity behind the pubes but no fundus could be felt. Absence of the fundus above the pubes and the extremely short distance the sound penetrated through the widely dilated os made the diagnosis of chronic inversion of the uterus certain as against that of polypus. The case was not a prolapsed uterus, as was demonstrated to the students in the wards.

At my first examination of the patient I tried to reduce the displaced organ then and there, but it was too painful for the patient. On Nov. 22nd an anæsthetic was administered, when, after having carefully carbolised my hands, and having douched the vagina, I made an attempt both by central and lateral taxis to replace the organ, but although part of the womb could be replaced within the os I did not succeed in returning the whole organ. Failing thus to keep the fundus in its place, I applied Aveling's repositor, packed the vagina with iodoform gauze, and drew together the suspenders of the instrument. The repositor was left *in situ* for three days, Dr. W. Simpson, the senior house physician at the Newcastle Royal Infirmary, tightening the bands daily. When the repositor was removed the inversion had entirely disappeared, the steady and continuous pressure of the repositor having accomplished what forcible taxis failed to do. When I examined the patient on Nov. 28th and the following days no portion of the inverted fundus could be felt in the vagina. The finger could be carried through the os into a well-developed cervical canal nearly one inch in length and the uterine sound now entered to half an inch beyond the bend. The restoration of the uterus was quickly followed by signs of improvement in the general health of the patient. After a further few days' rest in bed she left the infirmary feeling remarkably well with her uterus in the normal position.

Newcastle-on-Tyne.

THE RELATION OF THE BOWEL LESION OF TYPHOID FEVER TO THE GENERAL SYMPTOMS OF THE DISEASE.

BY T. J. MACLAGAN, M.D. EDIN.

THE most prominent of the general symptoms of typhoid fever, that which from first to last is the dominant feature of the illness, is fever, indicated by a rise in the temperature of the body. This rise begins with the onset of the stage of invasion, reaches its maximum often as early as the fourth

or fifth day, and generally by the end of the first week; after the tenth day there is as a rule no further rise, but the final fall of commencing convalescence seldom shows itself before the twentieth or twenty-first day of the fever. The temperature is higher in the evening than in the morning, the maximum range varying from 102° to 104° F. That is the course of the fever in an ordinary typical case of typhoid fever, in which the lesion goes on to sloughing and ulceration, in which no complications arise, and in which we have to deal with nothing except the action of the typhoid bacillus.

In very mild cases in which the inflammation of the intestinal glands terminates in resolution the temperature seldom rises beyond 101° or 102°, and the fever comes to an end in from 12 to 20 days. In severe cases in which the fever lasts for four or five weeks the temperature may remain high during the whole course of the illness. Between the very severe and very mild cases there are all shades and degrees. There is no ailment which presents such protean features as typhoid fever, and no form of fever in which the temperature varies more in different cases. But in uncomplicated cases of typhoid fever the maximum range of temperature is reached before the tenth day, before the local lesion has given evidence of its existence.

How does the bacillus produce the general febrile disturbance? Is the fever merely symptomatic of the bowel lesion? Or is there any other agency at work? How the bacillus acts in producing the bowel lesion we have already seen.[1] We have seen, too, that in its early stages, while affecting only the submucous coat, this lesion gives rise to no local disturbance, no local indications, subjective or objective, by which its existence could be diagnosed, and yet it is at this stage that the temperature attains its maximum. A local lesion which does not cause enough local disturbance to enable us to diagnose its existence is not likely to cause so much general febrile disturbance as is noted at the end of the first week of an attack of typhoid fever. This maximum of fever and minimum of local disturbance, though associated clinically, are not likely to be associated causally. It cannot, indeed, be said that so important a lesion causes no general disturbance and has no share in the production of the fever, but it is evident that its presence is not sufficient to explain and account for the marked rise of temperature noted during the first week of the disease. There must be some other agency at work: but the sole agency with which we have to do is the bacillus. There must, therefore, be some action of the bacillus other than its local action on the intestinal glands, in virtue of which it causes the general febrile disturbance.

In dealing with the action of the bacillus on the intestinal glands we are dealing solely with the action of the parasite on its nidus. But there is also the general action of the organism on the system; and that is what we have to do with in considering the pathogenesis of the general febrile disturbance. The first bacillus which enters the system from without is entirely inert until it is vivified and roused into activity by contact with its nidus in the intestinal glands. Here it is rapidly reproduced and in a short time, as gland after gland is invaded, hundreds, thousands, and ultimately millions of the specific organisms of typhoid fever pass from the nidus into the general circulation through the numerous lacteals and veins with which the affected glands are so abundantly supplied, in a network of which indeed they lie embedded. But be it specially noted that the mass of the organisms which thus pass into the circulation are not mature bacilli but young germs which have just been reproduced, have just entered on their separate existence, and whose organic growth has yet to be completed. Not only in the affected glands but all over the body, in the minute structure of all its tissues, this organic growth goes on and the poison passes from the germ state to that of the mature bacillus. It is the action resulting from the organic growth in the tissues of these millions of organisms that gives rise to the general febrile disturbance associated with the development of the bowel lesion.

The action of the bacillus is thus a dual one: (1) there is the specific local action of the parasite on the intestinal glands; and (2) the general action of the organism on the blood and tissues. The bowel lesion does not cause the fever and the fever does not cause the bowel lesion. They are conjoint results of this double action of the bacillus.

To form a just estimate of the tremendous morbific power of these organisms and of their capacity to produce disturbance we must have some idea of the enormous extent to which they are reproduced and the immensity of the numbers with whose action we have to deal, for it is the vastness of their number rather than the potency of the individual that serves to explain the phenomena to which they give rise. Suppose that each bacillus produced ten others and that one day was the time requisite for the process of reproduction we should from one bacillus have in ten days 1 000,000 000:—thus, on the first day one; on the second day 10; on the third day 100; on the fourth day 1000; on the fifth day 10 000; on the sixth day 100,000; on the seventh day 1,000 000; on the eighth day 10,000,000; on the ninth day 100,000,000; and on the tenth day 1,000,000,000. Let us take a more modest estimate and suppose that each bacillus produced only four others in 24 hours, we should have the following result: on the first day one; on the second day four; on the third day 16; on the fourth day 64; on the fifth day 256; on the sixth day 1024; on the seventh day 4096; on the eighth day 16,384; on the ninth day 65,536; on the tenth day 262,144; on the eleventh day 1,048,576; on the twelfth day 4,194,304; on the thirteenth day 16,777,216; and on the fourteenth day 67,108,864. Even at that rate we should have in a fortnight from one bacillus more than 67,000,000. Suppose 12 instead of 24 hours to be the time requisite for the reproduction of the germs their rate of increase would be doubled. The mind can hardly grasp the number of bacilli which may thus be launched into the circulation.

The action which culminates in this result and in the symptoms of typhoid fever begins at the beginning of the period of incubation, the time at which the poison is received into the system. At first from the paucity of the numbers the rate of increase is comparatively slow and the number of bacilli brought into action is not sufficient to cause disturbance of the system. That is what is taking place during the period of incubation—that is, indeed, what constitutes that period. But it is evident that a time must come when the quantity of poison in the system is so great that it cannot be reproduced four-fold without causing almost an explosion of germs in the system. The onset of this inevitable event terminates the period of incubation and ushers in the stage of invasion. A glance at the figures given will show how certainly this must occur. The reproduction, slow at first, speedily becomes very rapid. Taking the first set of figures the number of bacilli produced at the end of the first five days is 10,000, by the end of the second five it is 1,000,000,000 Taking the second set, at the end of the first week the number is under 5000; by the end of the second week it is over 67 000,000.

It is the organic growth in the tissues of these vast hordes of bacilli that causes the fever and general disturbance noted in typhoid fever. How do they do this? Rise of temperature may be produced in one of two ways: (1) by increased activity of the process by which heat is formed; or (2) by diminished activity of the process by which its formation is inhibited and kept within due bounds. That due to impaired inhibition is illustrated by hyperpyrexia and the increased body heat which results from some lesions of the brain and cervical cord. That due to increased production is exemplified by that with which we are now dealing.[2] But rise of temperature is not the only symptom of such fever. Wasting of the nitrogenous tissues, increased elimination of urea, increased rapidity of the circulation, thirst, dry skin, and scanty urine,—these with rise of temperature are the essential phenomena of fever.

The essential and distinctive feature of an organism is its action on its environment. The action of an organism such as the typhoid bacillus on its environment in the tissues consists in the consumption of nitrogen and water—a consumption which, in virtue of their vast numbers, must be very great. Now when we come to examine minutely into the various phenomena of the febrile state as it occurs in the specific fevers we find that they ultimately resolve themselves into two—increased consumption of nitrogen and increased consumption of water. From these two all the others result. Rise of temperature, quickening of the circulation, wasting of the nitrogenous tissues, increased elimination of urea, thirst, loss of appetite, dry skin, scanty urine all owe their existence to the consumption by the contagium of the nitrogen and water destined for the tissues.

[1] THE LANCET, Dec. 8th, 1900, p. 1639.

[2] See "Fever, a Clinical Study," by T. J. Maclagan, M.D. (J. & A. Churchill, 1888).

For their consumption by these hosts of bacilli represents a direct loss to the tissues. Occurring in the nitrogenous tissues it gives rise to the rapid wasting of these tissues noted during an attack of typhoid fever. Occurring in the brain it causes the headache of the earlier and the wandering of the later stages. Other and necessary results of this consumption by an external agency of the water destined for the tissues are those indicative of a short supply—thirst, dry skin, and scanty urine. The supply may be ample, but it is tapped *en route* by the bacilli and does not reach the tissues in sufficient quantity.

The seat of normal tissue metabolism is the minute structure of the tissues. That, too, is the seat of the abnormal action which we are now considering. Tissue metabolism consists (1) of the taking up of new material from the store albumin, to form fixed or organ albumin; and (2) of the giving off from the tissues of their worn-out organ albumin, which passes back into the circulation and is ultimately eliminated as urea. These actions are simultaneous, neither preceding the other. The bacilli lay hold of the nitrogen of the store albumin at the moment when it is about to be appropriated by, and incorporated in, the tissues as organ albumin. The simultaneous action by which the worn-out organ albumin passes back into the circulation is equally far advanced. Nothing intervenes to prevent this, it goes on only more actively in consequence of the increase of metabolism, and thus is brought about the physiological anomaly that lessened consumption of nitrogen by the tissues is accompanied by increased elimination of nitrogen by the kidneys.

The matter may be briefly put thus: What is the cause of the wasting of the nitrogenous tissues? The consumption by millions of bacilli of the nitrogen destined for their nutrition. What is the cause of the thirst, dry skin, and scanty urine? The consumption by the same bacilli of the water destined for the tissues. What is the cause of the rise of temperature and quickening of the circulation? The increased metabolism which necessarily results from this action going on in the minute structure of the nitrogenous tissues, the chief seat of heat formation. Thus all the essential phenomena of the febrile state as it presents itself in typhoid fever are traceable back to these two agencies—increased consumption of nitrogen and increased consumption of water; and these in their turn result from the action necessarily attendant on the organic growth of vast numbers of bacilli in the structure of the tissues.

Other symptoms noted during the course of the fever are equally explained on this view of the mode of action of the bacillus. The headache of the earlier and the delirium of the later stages of the fever are due to cerebral inanition consequent on the consumption in the brain tissue of the nitrogen and water destined for the nutrition of that organ. The softening of the cardiac muscle and the changes noted in it after death are due to the same cause acting in its structure.

In typhoid fever, as in the other specific fevers, the soda salts are retained in the system or are eliminated in much diminished quantity, while the potass salts are eliminated in increased quantity. The soda salts exist chiefly in the liquor sanguinis; they are retained because the bacilli in taking up the nitrogen and water of the liquor sanguinis take up also the soda salts in it. The potass salts exist chiefly in the tissues; they are eliminated in increased quantity because there is increased tissue disintegration. All these actions go on and all the febrile symptoms continue so long as the bacillus is being reproduced and come to an end only with the cessation of that process. But why does it cease? Why do these organisms not go on growing as long as any nitrogen and water remain for them to consume? And why does anyone ever recover? The fever thus caused comes to an end when the bacilli cease to be reproduced, and their reproduction ceases when the nidus is exhausted, that is, when all the glands which form the nidus have been destroyed. The course of events shows that on an average it takes five weeks more or less for the completion of this process, two weeks occupied by the period of incubation, and three by the febrile stage. Thus all the essential phenomena of typhoid fever, its rise, course, and decline, are causally associated with the life-history of its bacillus in the system.

Recrudescence of the fever.—It has already been pointed out that the intestinal glands are not all affected at the same time and that some reach the stage of sloughing and ulceration, while others more tardily affected are still at the stage of hardening and thickening. It not unfrequently happens that some glands do not become involved in the morbid process till so late in the disease that the fever caused by those already affected is on the decline or may even have come to an end and the temperature be normal before the fresh lesions are sufficiently advanced to add their quotum to the general disturbance. Their appearance on the scene is heralded by a renewed rise of temperature and a recrudescence of the fever. Such recrudescence may occur towards the end of the third week or at any subsequent period. It means fresh glandular lesions, the launching into the circulation of fresh shoals of bacilli and consequent recrudescence of the fever, with a renewal of all the symptoms local and general.

Cases are not uncommon in which, by a repetition of these recrudescences, the fever is prolonged into the fifth or sixth week, it may be without any material addition to the gravity of the symptoms other than that which comes from the prolongation of a disease which is so exhausting and so full of hazards. The latter part of these cases is really made up of a succession of short attacks following each other so quickly that the one almost dovetails into the other. Each is indicative either of the invasion by the bacilli of one or more fresh glands or of a fresh absorption of septic material.

Relapses.—Sometimes the invasion of the latest affected glands is so retarded that instead of an apyretic interval of only 12 or 24 hours we have six or eight, or even 10 or 12, days of apyrexia and apparent convalescence. The fever is then said to relapse. The pathogenesis of the relapse is the same as that of the recrudescence; the difference is the length of the period of apyrexia which separates the second from the first attack. This period of apyrexia is really the period of incubation of the second attack. But the beginning of that period is contemporaneous with the later days of the primary seizure, so that the poison which gives rise to the relapse has really begun its action before the first attack is at an end, and the two, though clinically distinct and separate, are pathologically one.

It has been supposed by some that relapses may be due to errors of diet, to getting up too soon, or to other indiscretion. But the relapse is as truly an attack of typhoid fever as was the primary seizure. Nothing could cause this except the typhoid bacillus. Moreover, the poison which causes it has really begun its action before the first attack is at an end and while the patient was still confined to bed. The relapse is of shorter duration and generally milder than its predecessor. That is what, on this view of its pathogenesis, we might expect, for the field of operation of the bacilli is much curtailed by the destruction during the first attack of so many of the intestinal glands. There is a more scanty nidus, fewer glands to suffer, and a consequent reduction both in the severity of the local lesion and the duration of the febrile symptoms; these seldom last more than a fortnight, often less. The shorter duration is due to the same cause as the lessened severity; there are not glands enough to cause three weeks of fever. But though the relapse is generally milder than the first attack the rule has a good many exceptions, for every now and then a relapse proves fatal. In connexion with this subject it has to be borne in mind (1) that the relapse comes when the sufferer is already weakened by the first seizure; and (2) that one lesion in the bowel suffices for the production of hæmorrhage and perforation and of a fatal issue.

It is mainly in consequence of their shorter duration that relapses are less fatal than first attacks, for the dangers of typhoid fever necessarily increase as the disease goes on. This shorter duration is due to the fact already indicated, that the nidus of the parasite, the field of operation of the bacillus, is materially reduced in extent by the destruction of the glands involved in the first attack.

It is a demonstrated fact that during the relapse glands suffer which had escaped all the risks to which they were exposed during the primary seizure. It occasionally happens that some even run the gauntlet of a second attack without suffering, for second and even third relapses, each with fresh lesions, are not unknown. How come they to escape? How is it possible for any glands to escape invasion by some of the vast number of bacilli reproduced during the course of the fever? Were this poison liquid and equally diffused through the blood it would be impossible for any glands to escape; but it is not liquid and diffusible, but particulate and indiffusible, and therefore not of necessity equally distributed through the blood. The germs reproduced in the intestinal glands may pass into the

general circulation either through the lacteals or through the superior mesenteric vein. But the bacilli in the blood can gain access to the glands only by way of some of the branches of the left or convex side of the superior mesenteric artery. The chance that no bacilli may ever reach some one particular branch of this artery which supplies a given inch or two of the bowel and a given half-dozen glands is quite an appreciable one. The clinical history of typhoid fever and the occurrence of relapses with fresh lesions shows that this chance occasionally becomes a reality.

Such is the explanation of the mode of action of the typhoid bacillus. The local disturbance in the intestinal glands is the result of the reproduction of the parasite in its nidus. The general febrile disturbance is the consequence of the organic growth in the tissues of the millions of organisms thus reproduced in these glands. Neither action would in itself be disastrous or be followed by serious consequences but for the fact that the trouble in the intestinal glands ends in sloughing and suppuration. These two processes bring into play other morbific agencies which are much more potent for evil than the typhoid bacillus. Before the glands slough there are no serious bowel symptoms and nothing to call special attention to the bowel. As already pointed out, the serious bowel symptoms which are apt to show themselves in the later stages of the fever are caused not by the typhoid bacillus but by the various organisms which come into play with the processes of sloughing and suppuration.[1] To the absorption of these organisms into the system are to be ascribed the prolonged duration of the fever in many of those severe cases which run on into the fourth and fifth weeks, the high range of temperature noted in their later stages, and all the alarming symptoms by which it is accompanied. The high fever, the feeble rapid pulse, the dry tongue, the muttering delirium, and general condition of typhoid prostration which characterise the later stages of severe cases are the symptoms not so much of typhoid fever as of septic poisoning. They occur in the advanced stages of bad cases of typhoid fever, but they are due not so much to the direct action of the typhoid bacillus as to that of the various forms of cocci associated with the sloughing process in the bowel. It is the absorption of these into the system and their reproduction there that causes the alarming symptoms of severe cases and makes typhoid fever so serious and so fatal a disease. There are degrees of this as there are degrees of typhoid fever. The sloughs may be comparatively few and come away without giving trouble. The more severe the bowel lesion the more extensive is the sloughing, the deeper the ulcers penetrate into the gut, and the more likely we are to have the poison absorbed into the system.

Gangrenous ulceration in any part of the body is apt to cause septic poisoning; that is, indeed, the chief danger of such ulceration. The risk of this is specially great in typhoid fever, first because the number of ulcers and consequent foci of absorption are so numerous, and second because the affected glands are situate in a network of veins and lacteals whose function it is to take up and carry into the system the materials presented to them.

Though all the symptoms of typhoid fever are ultimately to be traced back to an action set agoing by the typhoid bacillus, not one of its serious symptoms or special dangers is due to the direct action of that bacillus. The dangers attendant on the bowel lesion, diarrhœa, hæmorrhage, and perforation result from the destructive action on the mucous, muscular, and peritoneal coats of the organisms associated with the processes of sloughing and suppuration. The alarming general symptoms which are noted in the later stages of severe cases—high temperature, feeble cardiac action, delirium, and prostration—are due not so much to the growth in the tissues of the typhoid bacillus as to the superadded growth of the millions of cocci which are absorbed into the system from the sloughing glands by the veins and lacteals among which these glands are embedded.

Cadogan-place, S.W.

[1] THE LANCET, Dec. 8th, 1900, p. 1639.

FOREIGN UNIVERSITY INTELLIGENCE.—*Brussels:* Dr. Bayet has been appointed Professor of Clinical Dermatology, and Dr. Cheval Professor of Clinical Laryngology.—*Halle:* Dr. Fritz Haasler, *privat-docent* of surgery, has been granted the title of Professor.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. GEORGE'S HOSPITAL.

A CENTRAL TUMOUR OF THE SHAFT OF THE RADIUS TREATED BY ENUCLEATION.

(Under the care of Mr. MARMADUKE SHEILD.)

THE advisability of the employment of enucleation for the treatment of a tumour of bone must depend chiefly on the nature of the growth. For non-malignant tumours this operation may safely be performed, and it is applicable even to cases of central chondromata, in which formerly amputation was always considered necessary. But in any form of malignant growth there is great risk of recurrence. And although in some cases of myeloid sarcoma no recurrence has been recorded after enucleation this must sometimes be due to the case having been reported soon after the operation. Still a sufficient number of cases have been put on record in which the less malignant forms of malignant growths occurring in the interior of bones have been treated by enucleation, and no recurrence has occurred even after several years. The treatment is therefore advisable whenever the slowness of growth or the microscopic structure of the tumour suggests that the malignancy is slight. For the notes of the case we are indebted to Mr. C. R. Keyser, F.R.C.S. Eng., surgical registrar.

A small, spare, and excessively anæmic woman, aged 19 years, was admitted into St. George's Hospital on Sept. 18th, 1900, under the care of Mr. Marmaduke Sheild, suffering from a tumour of the right forearm. The history was as follows. Ten years ago, whilst swinging on a ladder, she twisted her right arm and "broke a small bone." On the removal of the splints some weeks later the swelling which she on admission complained of was discovered. It had gradually increased in size and gave rise to pain at times in the arm and fingers. She was positive that the tumour was of 10 years' duration. On examining the right forearm there was an oval-shaped tumour, obviously an enlargement of the radius, about midway between the elbow and the wrist, but projecting mostly towards the radial side of the arm. It was of stony hardness, with some increase of heat on the surface, and there were many dilated veins coursing over it. It was not adherent to the skin, and no softening, bruit, pulsation, or egg-shell crackling could be detected. In length it measured three inches and the circumference at its widest part was seven and a half inches. The muscles of the forearm and hand were somewhat wasted, but she stated that the right hand was just as useful and as strong as the left. Aching pain was constantly present. It was thought at "consultations" that the tumour was either a very slowly growing (so-called) myeloid sarcoma, an enchondroma, an old fracture with excessive formation of bone, or some rare form of osseous cyst, such as hydatid or sanguineous cyst, but in any case that it ought to be explored and dealt with according to what was found.

On Oct. 4th, ether having been given, Mr. Sheild applied an Esmarch's bandage to the limb and then made an incision about five inches long on the radial side of the tumour on its dorsal aspect and exposed the bone and trephined it. The wall of the tumour was very thin and its cavity was partially divided up into loculi by thin bony septa. These can be well seen in the striking skiagram which was taken at the hospital by Mr. Addyman in charge of the Roentgen-ray apparatus. The bony wall of the tumour was cut away for about four inches and the contents, which were soft, and yellowish in colour, were scooped out with a sharp spoon. The small lower growth seen in the skiagram was left alone. The inner aspect of the hollow was then thoroughly cauterised and swabbed over with pure

carbolic acid, and the great cavity was finally packed tightly with iodoform gauze soaked in turpentine. An antiseptic dressing and a splint were bandaged on and the constricting band was removed. Absolutely no hæmorrhage occurred.

Skiagram of tumour showing loculi formed by thin bony septa.

Dr. H. D. Rolleston, who kindly examined the tumour microscopically, reported that the "growth shows myxomatous tissue, and in places the structure suggests a spindle-celled sarcoma, while in others there are young cartilage cells. It is more probably a myxo-chondroma with recent sarcomatous change than a chondrifying myxosarcoma. There are numerous areas of fatty degeneration in the tumour."

The cavity slowly became obliterated by granulation tissue, and the gauze packing, which was removed daily after soaking the arm for some time previously in a bath of hot boric lotion, was omitted on Oct. 22nd. On Nov. 3rd the patient unfortunately developed a severe sore-throat, and the tonsils and uvula rapidly became covered with a yellowish white exudation, and the glands behind the angle of the jaw were enlarged and tender. The temperature, however, never rose above 99·8° F., and although the exudation was examined several times by Dr. C. Slater, bacteriologist to the hospital, no diphtheria bacilli were ever found. By Nov. 10th the throat was well and the wound in the forearm was practically healed, and she was discharged from the hospital on Nov. 17th. Her present condition is excellent. The swelling is much smaller, the arm is strong and can be used freely, and all pain has disappeared.

Remarks by Mr. MARMADUKE SHEILD.—It is too early to say if the cure can be considered permanent. The suspicion of sarcomatous elements being mixed with the cartilage makes one cautious in prognosis. In instances of chondro-sarcoma of the bones the growth has repeatedly been known to recur in other parts, as the lungs or the meninges of the brain. The consolidation and shrinkage of the osseous shell, however, look very promising, and time alone can settle the question of local or general recurrence. The skiagram shows a small growth lower down in the shaft. This may possibly take on growth and expand the bone, but if it does so it will be treated in the same way as the larger growth.

This case is an extremely interesting example of what help may be obtained by skiagraphy in the diagnosis of tumours of the bones. Of course, all exostoses appear plainly. Periosteal sarcomata merely give a faint shade unless impregnated with calcareous salts. Cavities in the bone, the site of cysts or abscesses, are usually distinctly demonstrated. In the present illustration the lobulated outline characteristic of cartilaginous tumours is plainly seen. And this, with the long history of the growth, rendered an approximate diagnosis possible.

Enucleation of tumours of bone has long been practised by surgeons, but the true ultimate results are perhaps hardly enough known. Many of the cases are done in hospital practice, and the patients are lost sight of, and the experience gained is lost or lies buried in the private mausoleums of hospital notes. Hitherto the operation has usually been done for myeloid growths, and I have seen it twice performed for these tumours in the head of the tibia. Both cases were very unfavourable. In one the growth rapidly recurred; in the other sepsis supervened and the knee-joint suppurated. The operation has also been done for angiomata of bone—so-called osteo-aneurysm. The differential diagnosis of these growths from very vascular sarcomata is vague and unsatisfactory, and in some reported cases diagnostic errors are manifest.

As regards central enchondromata of bone they are undoubtedly rare. By far the greater number of these tumours originate on the surface of the bones, in which by pressure they may form deep hollows. Fixed by the periosteum and fascia the similarity to a tumour growing out of a bone is very great. I have seen one of the best of the former surgeons in London amputate a finger when he supposed the bone was distended by a cartilaginous tumour, and the growth fell from the bone upon the ground after the periosteum was divided over it. The appearances of the cartilage in the present case, especially the lower patch, are very suggestive of "islets" of undeveloped cartilage left in the bone, though there is no evidence of old marked rickets in the patient.

The case is of importance and interest in showing how far central tumours can be diagnosed by the x rays and as affording an undoubted example of the efficacy of the practice of enucleation in suitable cases. The method of operating, making the part exsanguine and stuffing with turpentine gauze before removing the bandage above, renders it possible to perform such operations with no loss of blood whatever. My previous experience of enucleation of tumours of bone has been confined to the jaws. I have had one instance of enucleation of a myeloma from the antrum of Highmore and one from the lower jaw which seemed permanently cured. At least, there was no return after three years. I have also had one case of large cyst of the lower jaw which contained brownish fluid sparkling with cholesterine. This was opened, scraped out, and stuffed, with a tedious after-treatment, but ultimate cure. I never was able to establish clearly the pathology of this remarkable cyst, but I believe it was quite unconnected with dental causes.

CUMNOCK COTTAGE HOSPITAL, AYRSHIRE, N.B.

A CASE OF ABSENCE OF THE ANUS AND RECTUM, WITH COMMUNICATION BETWEEN THE INTESTINE AND URINARY TRACT; OPERATION WITH RECOVERY.

(Under the care of Dr. JAMES MCQUEEN.)

DR. J. MCQUEEN is to be congratulated on the favourable result of the operation which he performed in the following case, for these abnormal communications between the rectum

and bladder are not prone to close spontaneously, even though a free way be made for the contents of the bowel. He was, however, clearly in the right in endeavouring to establish the normal channel. This should always be done if it be possible to reach the rectum from the perineum, for in these cases it may be found practicable to close the recto-vesical communication at a subsequent operation. Formerly it was advised, as he mentions in his remarks, to make an artificial anus in the inguinal region to divert the fæces, but of late years it has been recognised that the benefits of a normally situated anus outweigh the extra risks of attempting to open the bowel from the perineum and the possibility of non-closure of the recto-vesical fistula.

A married woman was confined at the Cumnock Cottage Hospital on July 23rd, 1900, of a healthy, well-nourished male child. While visiting her on the following day Dr. McQueen's attention was directed by the midwife to the fact that there was "something peculiar" about the anus of the child. On examination it was found that the anus was absent and that at the point where it would have been expected there was a papillary projection closely resembling a small external pile. There was no bulging in the perineum. During the examination of the child a small quantity of fæcal-stained mucus exuded from the urethra. On inquiry it was found that this had occurred on several occasions since birth. After explaining the serious nature of the condition permission was obtained to attempt to remedy it.

The papilliform projection already noted was first removed and the incision was extended towards both the coccyx and the pubes. As there was no appearance of a rectum or any bulging point dissection was carefully carried up, keeping well into the surface of the sacrum. On getting to a depth of about one and a quarter inches a tense shining membrane was met. On inserting the finger it was found that this bulged downwards when the infant cried or strained. With some difficulty the membrane was seized with a bulldog forceps, and on making an exploratory puncture some meconial-stained fluid exuded. The gut was now separated from its connexions, but considering the depth and narrowness of the opening and the proximity of the peritoneum this could not be done to any great extent. The gut having been pulled down to the surface was incised for about half an inch and a large quantity of meconium was evacuated. The lips of the opening into the bowel were stitched to the lips of the cutaneous incision and a dry dressing was applied.

The progress of the case for the next two days was uneventful. On the third day it was found that the stitches had sloughed out of the friable perineal tissues. The gut had retracted a short distance, but the red, pouting mucous membrane formed a guide to the object sought. It was again pulled down and stitched as before, but on the fourth day the stitches again gave way. On this occasion, however, the bowel had not retracted so far and consequently it was deemed advisable to leave the structures as they lay. Four weeks later the orifice became constricted and fæcal matter was again passed from the urethra, but not in great quantity. Digital dilatation was performed and continued once a week for three weeks, the mother being instructed to pass a bougie twice daily. The bougie was afterwards alone used, but in 10 days slight constriction again occurred. On inserting the finger a little fæcal matter exuded from the penis, although the mother had not observed any for some weeks previously. Since then the case has proceeded in an eminently satisfactory manner. For the last 15 weeks no fæces appeared in the urine and the bougie is now only occasionally used. The only thing that one can note on external examination is that the anus is deeply planted, doubtless owing to the gut dragging on the surface incision. The child's health has all along been excellent, and he is at present (aged five and a half months) a well-nourished, healthy child.

Remarks by Dr. MCQUEEN.—The above case seems to be interesting from two points of view, especially because of the probable etiological explanation of the condition viewed from a developmental standpoint, and the bearing of this on the operative procedure and its result.

1. The bladder and urethral tract develop from the allantois which is an invagination of the wall of the hinder part of the primitive intestine. The neck of the allantois becomes obliterated, but in the case noted this seems to have persisted, maintaining the connexion between the blind pouch of gut and some part of the urinary tract during extra-uterine life. In addition the proctodæum was absent and consequently no rectum was formed to evacuate the contents of the intestine. The fistulous tract which persisted was analogous to a Meckel's diverticulum—the persistent neck of the umbilical vesicle, or to a persistent neurenteric canal communicating with the post-anal gut or to a patent urachus. All of these conditions are found as anomalies in extra-uterine life. In the case under discussion it is impossible to say at which point of the urinary tract the fistulous connexion with the intestine persisted. Judging from the depth at which the gut was found it seems not improbable that the junction was high up, possibly in the lower part of the bladder.

2. If this be the real explanation of such a case is it not possible that the fistulous connexion may close up spontaneously when nature has dispensed with its services through the aid of operation? The neck of the umbilical vesicle, the neurenteric canal, and the urachus are all normally closed when their functions are taken up by other organs. So in a case like the present: free passage has been given to the contents of the intestine and the persistent allantoic neck has probably become obliterated.

Judging from text-books the perineal operation is practically discarded as hopeless in cases like the present; it is recommended that a colotomy be performed at once. An artificial anus in the loin is quite consistent with life, but the discomfort and inconvenience must be very great. Besides, the mortality incidental to this operation in infants is very high. Granted that a vain search be made through a perineal incision in such a case, it can easily be closed up and a colotomy performed. By a colotomy, of course, the fæces are thrown out ere they reach the allantoic neck, and so the danger of their passage into the urinary tract is entirely obviated. In a perineal operation, however, there seems a reasonable hope that the fistula will be closed through its function having been superseded by the relief given by operation, although for a short period a little fæces may pass at times. It may be argued that the smallest quantity entering the bladder is a danger, but there is also the probability that the neck of the allantois will not be wider than the urethra, and that consequently what enters by the one can be thrown out by the other. Obviously, at all events, whatever operative interference is determined upon it must be radically carried out, and that, too, without delay if a favourable termination be anticipated.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Epidemic of Arsenical Poisoning in Beer-drinkers in the North of England during the year 1900.

A MEETING of this society was held on Jan. 8th, Dr. F. W. PAVY being in the chair.

Dr. ERNEST S. REYNOLDS (Manchester) made a communication on an Epidemic of Arsenical Poisoning in Beer-drinkers in the North of England during the year 1900 (illustrated by lantern slides). Dr. Reynolds's attention was first drawn to this subject in June, 1899, when he noticed an unusual number of cases of various skin eruptions, amongst them as many as five or six suffering from erythromelalgia in the workhouse infirmary. Later there was an unusual number of cases of peripheral neuritis. He then noticed that the skin eruptions occurred in the patients suffering from neuritis, and remembering that herpes might be produced by arsenic he suspected the beer, which was the apparent cause of the multiple neuritis in these patients. Professor Sheridan Delépine analysed various specimens of beer and found that they contained quantities of arsenic varying from two to four parts per million, which was equivalent to about one grain of arsenious oxide in three gallons. The same observer had found that invert sugar might contain 0·2 parts per 1000, glucose 0·8 parts per 1000, and sulphuric acid as much as 1·4 per cent. of arsenious acid, which was equivalent to four ounces of arsenious acid in the gallon, all of which substances were used in the manufacture of beer. Traces of arsenic could also be found in "sulphured" hops, various malts (from the anthracite used in manufacture), and in the vulcanite tubing. Various observations had led to the discovery that many beers were extensively contaminated with arsenic and that the beer and stout in

London contained a good deal of arsenic. The epidemic under investigation had occurred chiefly in the north of England and to some extent in the midland counties. Many thousands of persons had been affected. It was not possible to get accurate figures, but Dr. J. Niven, the medical officer of health of Manchester, had estimated that at least 2000 persons in Manchester had suffered from arsenical poisoning. The patients complained of a variety of symptoms, such as pain in the feet and limbs, pins-and-needles, tingling in the soles of the feet, general weakness, difficulty of walking, swollen feet, and vomiting and diarrhœa. The aspect presented by the patients was so typical that a diagnosis could be made at sight by those accustomed to see these cases. There was a puffiness, especially about the eyelids, and a deep crimson colour of the face. The walk was also very characteristic—it was as though the patient's feet were sore; later there was the high-stepping gait. Numerous skin eruptions appeared—erythromelalgia was perhaps the commonest. It consisted of a painful red swelling of the hands and feet. This erythematous condition was most intense along the edges, the centre of the palms being almost exempt. The pain was very marked, so that the patients could not sleep. These red patches were followed by keratosis of the hands and feet, the scales being exfoliated so plentifully that a two-ounce bottle could be filled with the flakes in a short time. This symptom (keratosis) was very important in the diagnosis because fair-haired persons did not get pigmentation. If a fair-haired person was affected with such keratosis, accompanied by well-marked peripheral neuritis, there was a strong presumption of arsenical poisoning. There were also scarlatiniform and morbilliform erythematous rashes. The first of these started like scarlet fever with a collaret round the neck. Sometimes there were papular eruptions and sometimes vesicular and bullous eruptions. These rashes might come on as late as six weeks after ceasing to drink the beer. Pigmentation was very common and a study of these cases showed that the older descriptions were not quite correct. It was true that some of the cases presented clear, isolated spaces of normal skin situated in a generalised pigmentation, but this was not always the case. 21 cases had presented herpes in various situations. A study of these had led Dr. Reynolds to the conclusion that herpes could be caused by the direct action of arsenic on the posterior spinal ganglion, and he could not agree with Dr. Henry Head's conclusions on this subject. Sometimes the eruption was preceded by severe neuralgic pains. The nervous systems of these patients had been very extensively affected and their symptoms corresponded in most particulars with what was known as alcoholic paralysis. The intense tenderness of the muscles was very characteristic. There was anæsthesia, but this was rarely complete. The mental condition was peculiar, this being characterised by loss of memory for time and place and a loss of power to initiate ideas; the latter features were wanting in many of the epidemic cases. The arsenical poisoning was seen to affect the heart muscle very seriously. The heart became dilated and there might be œdema of the feet and the chest wall. Death usually ensued from some form of cardiac failure. Dr. Reynolds's cases had presented the same generalised catarrh of the mucous membrane which Brouardel had observed in 1888 in an epidemic affecting 15 persons where arsenic was given for homicidal purposes. *Apropos* of the administration of arsenic in cases of phthisis he (Dr. Reynolds) had noticed that when patients who were the subjects of phthisis had taken the arsenical beer, instead of improving them they had rapidly gone to the bad. Vomiting had been a very constant feature in his cases, affecting as many as 75 per cent., and so also was diarrhœa. The urine of many of the patients had contained arsenic, which could be found as long as two weeks after ceasing to take the contaminated beer. Arsenic was also secreted by the milk. In some of the cases the temperature had been elevated. A study of his cases had led him to the conclusion that arsenic was a cumulative poison and was not eliminated at once. It appeared to affect the skin, the respiratory and digestive mucous membranes, the nervous system, the heart, and the liver. As regards varieties there were four groups: one in which the patients presented *all* the symptoms previously mentioned, a second in which the skin lesions predominated, a third in which the cardiac and other visceral lesions were the most pronounced, and a fourth in which the paralytic symptoms predominated. The disease might last for from 18 months to two years, though some patients got well in a few weeks. There had never been any difficulty about the diagnosis, though similar cases at Chester had been diagnosed as beri-beri by a physician who had practised in the tropics. In beri-beri, however, there were no skin lesions such as these patients presented. Dr. Reynolds then referred to some previous epidemics of arsenical poisoning. In one which was recorded by Chomel in 1828 and was known as the "épidemié de Paris" 40,000 persons had died in seven months. Graves's description of the clinical phenomena in this epidemic exactly tallied with those at Manchester. There had been an epidemic at Havre in 1868 which had affected 15 persons and which had been described by Brouardel and Pouchet. In the same year 480 persons had been attacked at Hyères by arsenic contained in wine, a record of which had been made by Barthelmy. In 1880 there was an epidemic at St. Denis in which 218 persons had been poisoned by arsenical bread. Returning to the Manchester epidemic Dr. Reynolds said that he had had 500 cases under his care; 291 of the patients were males and 209 were females. He was, however, under the impression that more females had been attacked, though they did not so readily come forward for minor complaints, probably from reasons of modesty. As regards the several lesions, herpes, heart affections, and hepatic symptoms had been more common among the men, but all the other symptoms were more marked among the females.

A communication from Sir W. R. GOWERS was read by the SECRETARY in which he drew attention to the remarkable immunity from arsenical poisoning experienced by those patients who took that remedy combined with bromide for a very long time. He had had a very large number of cases of epilepsy in which a proportion of 10 minims of liquor arsenicalis to 60 grains of bromide had been administered for long periods of time, but he only remembered to have seen one case of chronic arsenical poisoning among them. He suggested that alcohol in conjunction with the arsenic was a very potent poison for the production of peripheral neuritis. He narrated several cases in illustration of his statements.

Dr. BUZZARD complimented Dr. Reynolds on his communication. There was no doubt that these cases were examples of multiple peripheral neuritis. Moreover, there seemed no doubt that this was in very large part due to the effects of arsenic, though he could not regard this reagent as the sole cause. Dr. Reynolds had seemed to suggest that all cases of what they now regarded as alcoholic neuritis were in reality a form of arsenical poisoning due to the imbibition of beer. But he could not subscribe to such a theory, for he had seen many cases which had been produced by brandy and wine, and his opinion was that the drinking of crude spirits alone was quite capable of producing peripheral neuritis. This, indeed, was the original doctrine. Later the disease had been traced to beer. Turning to the symptoms of arsenical neuritis, acute tenderness of the muscles was an equally prominent symptom in alcoholic neuritis. Keratosis, he thought, might also be met with in alcoholic cases, and he had seen considerable disturbance of the cuticle on the soles. He would like to ask if the epidemic had occurred in persons who were only moderate drinkers of beer. The relative absence of mental symptoms in Dr. Reynolds's cases confirmed the idea that they were due to arsenic rather than to alcohol. Like Sir William Gowers, he (Dr. Buzzard) could not help drawing a comparison between the arsenical poisoning of beer-drinkers and the absence of symptoms in epileptic and other patients who took far larger quantities of arsenic for longer periods of time. Reference was made to an investigation which had been made into 17 specimens of beer in which arsenic had been found in proportions varying from a mere trace to 0·28 parts per gallon, representing an average, say, of $\frac{1}{10}$ths, or about one-ninth, of a grain of arsenic per gallon of beer. A patient would thus take a quantity of arsenic equivalent to about two-thirds of a minim of Fowler's solution to a glass, and a moderate drinker would only take a tithe of the quantity of arsenic which an epileptic would be taking. What was the cause of this apparent inconsistency? There was no doubt a liability in some persons to suffer from arsenical poisoning, and Dr. Buzzard referred to the case of a man, aged 55 years, who after taking rather less than 15 grains of arsenic in the form of Fowler's solution in the course of seven weeks presented erythematous swelling and exfoliation of the palms of the hands and the soles of the feet, peeling of the skin, loss of

knee-jerks, and diminution and perversion of sensation. He ultimately made a good recovery.

The discussion was adjourned.

OBSTETRICAL SOCIETY OF LONDON.

Primary Ovarian Pregnancy with Rupture 14 Days after last Menstruation.—Exhibition of Specimens.

A MEETING of this society was held on Jan. 2nd, Mr. ALBAN DORAN, the President, being in the chair.

Mr. G. P. ANNING and Mr. HARRY LITTLEWOOD communicated a paper on a case of Primary Ovarian Pregnancy with Rupture 14 days after last Menstruation. The patient was aged 28 years and had been married five months; there had been no previous pregnancy. Menstruation was usually normal. She was operated upon on August 27th, 1900, for a ruptured ectopic gestation, about 36 hours after the rupture. About two pints of blood and clots were removed and a small ovum of about the size of a Barcelona nut was found. This fitted into a firm envelope composed of laminated clot. There was a rent in the right ovary leading to a cavity which contained some blood; into this the ovum and its sac exactly fitted, clearly indicating the primary ovarian origin of the pregnancy. The right tube was removed and showed no evidence of rupture. The left tube was examined and was found to be normal. The cystic portion of the left ovary was removed. The patient made a good recovery. The specimens were shown, with microscopical sections of the ovum, the sac, and a portion of the ovarian wall.

Mr. BLAND-SUTTON remarked that belief in ovarian pregnancy could be traced back more than two centuries, but a critical examination of recorded cases showed that in some instances the supposed ovarian fœtus was in reality a dermoid and in others a sequestered fœtus (lithopædion) in the broad ligament. In a few instances the account of the dissection was so careful and circumstantial as to leave the impression that the formation of the embryo in the ovary could not be denied. It must also be borne in mind that the modern cases prior to 1899 rested upon no safer evidence than the non-detection of the ovary during an operation or upon the post-mortem examination of a person with an advanced extra-uterine gestation. Even such a careful and judicious writer as Dr. Farre did not deny the possibility of a spermatozoon entering an ovarian follicle, but he denied that any case of ovarian gestation had been satisfactorily proved. Mr. Bland-Sutton came to the same conclusion after a study of a much larger number of specimens than were available to Dr. Farre and with the advantage of modern methods of histological research. His (Mr. Bland-Sutton's) investigations had been particularly directed to the very early stages, for he urged as a postulate that if the ovum was really capable of being fertilised in its follicle "an early embryo in its membranes contained in a sac in the ovary" should be forthcoming. He was convinced that the specimen now before the society was an example of early ovarian pregnancy; the only possible objection that could be raised to this view of its nature depended on the fact that Mr. Anning and Mr. Littlewood had not taken any steps to prove that the "mole" had not been ejected through the ccelomic ostium of the tube (tubal abortion). Mr. Bland-Sutton would not press this objection because he had sections of a more complete specimen which quite satisfied him that an ovum could be fertilised whilst in its follicle. Mr. Anning and Mr. Littlewood were entitled to, and would receive, the best thanks of the Obstetrical Society for their kindness and energy in coming from Leeds and recording a case that would become historic. Since the last meeting of the society Mr. Bland-Sutton had visited Amsterdam, and through the courtesy of Dr. Catherine van Tussenbroek had been able to see the early example of ovarian pregnancy described by her and had brought back sections which would be available for inspection by any Fellow of the society. There were a few features particularly worthy of mention in connexion with this important case. The condition of the parts was exactly analogous to that of a tubal mole, so that for convenience of reference they would have to speak of it as an "ovarian mole"; the blood corpuscles in the vessels of the villi were nucleated; there was no trace of a decidua in the ovarian follicle; and it was an interesting fact that in the clinical report of the case it was stated that a decidua had formed in the uterus, and a few days after the operation was discharged with the *douleurs d'accouchement*. Mr. Bland-Sutton further stated that he had always been candid in his expressions of doubt regarding the older cases of alleged ovarian pregnancy inasmuch as they could not be again brought under observation and re-examination in the light of new knowledge; hence his persistent request that the postulate in regard to the presence of an early embryo in a sac inside the ovary should be satisfied. Another matter profoundly interesting to him was the fact that the "mole" with its chorionic villi which had become the criterion for many cases of early tubal pregnancy seemed likely, from this specimen, to become the criterion of early ovarian pregnancy also, and a large field of inquiry had thus been opened, for the condition known as blood cysts of the ovary would now require very careful investigation in the new light afforded by this remarkable and epoch-making specimen.

Dr. A. L. GALABIN thought that the society might be congratulated that this much-controverted question might now be considered finally settled since Mr. Bland-Sutton was converted. He had always believed in the possibility of both ovarian and primary abdominal pregnancy and thought that those who denied it had gone upon an *a priori* assumption that the tube was the only structure besides the uterus which could give primary attachment to the ovum. He had not himself met with a case of ovarian pregnancy but believed that he had met with one of primary abdominal pregnancy which was presented to that society and reported on by a committee as being probably of that nature.

After some remarks by Dr. W. S. A. GRIFFITH and Dr. ROBERT WISE,

Mr. LITTLEWOOD said he thought that the case clearly proved the possibility of a primary ovarian pregnancy and was glad to have had the opportunity of bringing the specimens to the first meeting of the Obstetrical Society in the new century. He thought that the society was greatly indebted to Mr. Bland-Sutton for having gone to Amsterdam and for bringing the specimens which he had shown.

The PRESIDENT referred to his own analysis of cases of alleged primary ovarian pregnancy published in the thirty-fifth volume of the society's Transactions. In both Sänger's and Leopold's specimens there was a lithopædion, and, as might be expected, the relation of the sac to the Fallopian tube could no longer be accurately determined. In Herzfeld's and many other cases the fact of the tube being intact was erroneously taken for proof that the pregnancy could not have begun in its canal. But Patenko's case seemed more probably genuine. In Dr. Croft's case the evidence was strong, but the pregnancy was somewhat advanced. Mr. Bland Sutton deserved credit for the trouble which he had taken to make sure about van Tussenbroek's case, which seemed to offer almost conclusive evidence of primary ovarian pregnancy. The same might be said of Mr. Anning's and Mr. Littlewood's case. The President suspected that these primary ovarian pregnancies aborted and broke down early, as seen in Patenko's specimen. Late ectopic gestations could generally be explained as developments, more or less evident, from a tubal sac.

Mr. ANNING replied

The following specimens were exhibited:—

Dr. G. E. HERMAN: Sarcoma of the Stomach.

Dr. HERBERT SPENCER: Large Uterus with Cervical Fibroid removed by abdominal hysterectomy by Doyen's method.

Dr. CUTHBERT LOCKYER: Congenital Omental Hydrocele.

Dr. WILLIAM DUNCAN: Gravid Uterus removed at Full Term by Intra-peritoneal Hysterectomy in a case of Contracted Pelvis.

The PRESIDENT: Acute Torsion of Ovarian Pedicle.

The specimens were discussed by the above and by Dr. GALABIN, Dr. GRIFFITH, and Dr. AMAND ROUTH.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 3rd, Dr. W. H LAMB the President, being in the chair.

Dr. LEONARD GUTHRIE showed a woman, aged 58 years, who had first come under observation two years previously. She then complained of palpitation, dyspnœa, tremblings, flushings, profuse perspiration, vague aches and pains, constipation, and general debility. The catamenia had ceased for two years. She had noticed swelling of her throat for

four months, and on examination the thyroid gland was found to be considerably enlarged. There was no proptosis, but the heart was irregular and intermittent and the pulse-rate was persistently from 120 to 130. She had also fine tremors characteristic of Graves's disease. There were no signs of myxœdema, but thyroid extract in five-grain doses was given tentatively at night only. She professed to feel great relief from this treatment and the goitre gradually dwindled until, in October, 1899, it was barely perceptible. She continued to take a five-grain tabloid of thyroid extract every night until June, 1900, when she was confined to the house by an abscess in her foot and the treatment was discontinued. On returning to hospital in December, 1900, she presented all the signs and symptoms of advanced myxœdema. She had grown very bulky and was so weak that she could hardly walk. Her skin was coarse and quite dry, her complexion was yellow, her cheeks were flushed, her eyelids were bluish and baggy, her hair and eyebrows were falling off, and her speech was thick, indistinct, and slow. The thyroid gland could not be felt, but there were two large soft symmetrical swellings above each clavicle which she had noticed for a month. After a fortnight's treatment by thyroid extract the symptoms and signs of myxœdema had almost subsided, but the pulse was rapid as it had been at first. Only a few cases of myxœdema following Graves's disease had been recorded, but Dr. Guthrie thought that the sequence was not uncommon.—Dr. JAMES TAYLOR discussed the case.

Mr. JACKSON CLARKE showed a man, aged 30 years, one of whose feet he had removed three months ago for a severe injury. The patient's left leg had been caught in the wheel of a tramcar and there was severe contusion of the soft parts nearly to the level of the tibial tuberosity. There was a deep wound below the internal malleolus; the posterior tibial vessels were torn through. The tissues of the sole of the foot were much contused. If primary amputation had been done in this case the limb would have been removed in the upper part of the leg; by waiting it had become possible to do a more conservative operation. When in the presence of severe injuries it was decided to wait every care must be taken to prevent sepsis.—Mr. RAYMOND JOHNSON was strongly in favour of avoiding primary amputation in many severe injuries of the hand and foot, for in many instances the extent to which the parts lost their vitality was much less than was at first expected and thus a formal amputation became unnecessary.

Dr. RISIEN RUSSELL showed a case of Myopathy with marked fibrillary tremors of the muscles in a male, aged 19 years. No other members of the family were similarly affected. The patient had enjoyed good health before the onset of the present illness but had suffered from weakness of the legs five years ago. This weakness had steadily progressed, but much more rapidly since a year ago when the arms first commenced to be weak. Fibrillary tremors were noticed seven months ago. The face was not affected and the muscles of the neck were intact. The lower part of the trapezius was not so well preserved as was the upper part and there was marked wasting of the following muscles: the infra-spinatus, the latissimus dorsi, and the triceps, biceps, and supinator longus. The trunk muscles were weak, as were the extensors and flexors of the hip, the extensors of the knee, and to a slight degree the calf muscles. There was marked atrophy of the glutei and of the quadriceps extensor; the sartorius and the adductors were also wasted and the calves were small. The muscles were symmetrically affected, none of them were enlarged or unduly firm, and those which were atrophied showed diminished excitability to both forms of electrical currents, without evidence of the reaction of degeneration. The fibrillary tremors were very pronounced and were not limited to the atrophied muscles. The triceps-jerks and knee-jerks were absent, the plantar reflex was normal, the sphincters were intact, and there was no blunting of cutaneous sensibility.

Dr. JAMES TAYLOR showed two cases of Syringomyelia. In one case, that of a female, aged 21 years, there were wasting of the small muscles of the right hand and the characteristic claw-like deformity. There was distinct anæsthesia, especially for thermal and painful stimuli, as high as the elbow on that side. There were nystagmus and lateral curvature of the spine but no affection of the face or lower limbs. Her symptoms had commenced about two years ago. The second case was that of a man with paralysis of the sixth, seventh, and twelfth cranial nerves on the right side, anæsthesia of the right side of the face, the right arm and the right side of the trunk, and some muscular wasting especially about the shoulders. There was also a spinal curvature but no affection of the legs. His condition had not appreciably altered in the last six years.—Mr. JACKSON CLARKE asked whether in these cases the spinal curves were of the same character as were those seen in some cases of infantile paralysis—i.e., whether the convexity of each curve was directed to the section of the spinal muscles that were the more extensively paralysed.—Mr. RAYMOND JOHNSON inquired as to the period of the disease at which the scoliosis was likely to develop, and if it ever occurred as the first symptom and that for which the patient alone sought advice.

Dr. HERBERT TILLEY showed a woman, aged 46 years, upon whom he had performed Kundt's Radical Operation for Chronic Empyema of the Left Frontal Sinus. The operation consisted of complete removal of the anterior bony wall of the sinus, curettage of the degenerated mucous membrane lining the cavity, and the application of the anterior soft parts to the posterior bony wall of the sinus. Some of the main features of the operation were briefly dwelt upon and it was pointed out that although the result as regards the cure of the disease was so excellent, yet it was purchased at the price of more deformity than resulted when less of the anterior wall was removed. The latter result had been demonstrated by cases hitherto shown at the society's meetings. The symptoms of which the patient had complained were chronic and severe left frontal headache, discharge of pus from the nose, and nasal obstruction due to polypi. These had completely disappeared since the operation. The patient was in the hospital for 17 days.]

Mr. E. W. ROUGHTON showed a man, aged 35 years, with a Lump in the Dorsum of the Tongue. Although it resembled malignant disease he regarded it as a case of syphilitic induration.—Mr. RAYMOND JOHNSON thought that the lump in the tongue, although not malignant, should be excised if it did not subside under anti-syphilitic treatment.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Bacillus Aerogenes Capsulatus.—Exophthalmic Goitre.—Segmentation of Heart Muscle.—Intra-ocular Sarcoma.—Tuberculosis of the Conjunctiva.

A MEETING of this section was held on Nov. 30th, 1900, Dr. A. C. O'SULLIVAN, the President, being in the chair.

Professor E. J. MCWEENEY gave an account of some work which he had lately done on Bacillus Aerogenes Capsulatus. A man whose arm had been ground almost to a pulp by a threshing machine was admitted into the Mater Misericordiæ Hospital and did not long survive amputation. At the operation a peculiar gelatinous state of the tissues was noted. The day following death the body presented a remarkable appearance, being swollen to twice its size, covered with huge bullæ, nearly black in colour, and crepitant wherever touched. The skin was so softened that a blunt pair of forceps could be thrust through with perfect ease, and from the apertures so made a frothy fluid, made up of turbid serum and sour-smelling gas, issued forth. The microscope revealed large anthrax-like bacilli in enormous numbers, mingled near the operation wound with smaller forms. By means of anaerobic plate cultures, made over alkaline pyrogallol in a special dish [exhibited], isolation of the large bacillus was accomplished, though not without difficulty. It was associated with bacillus coli and a streptococcus, both of which grew quite well in the total absence of free oxygen. The gas-forming bacillus was quite as large as that of anthrax, stained well by Gram's method, was non-motile, devoid of spores, and possessed a thick capsule which usually remained unstained. It appeared to grow most luxuriantly in 1 per cent. of sodium-sulphindigotate-agar, the medium becoming decolourised, save the upper centimetre where the oxygen necessary for the pigmentation was supplied by the atmosphere. It also grew well on ordinary media in an atmosphere of hydrogen, but not in coal-gas. Rabbits killed shortly after intravenous injection with half a cubic centimetre of fluid containing bacilli in suspension became distended with gas. The heart and vessels

contained frothy blood, and the liver was converted into a soft, dark grey mass, riddled with cavities containing gas. [A specimen of such a liver—the "Schaumleber" of German post-mortem rooms—was exhibited.] A rabbit which had been injected intra-muscularly with the pure culture suffered from a spreading gangrenous process, but this was found at the necropsy to be due to a mixed infection. Professor McWeeney demonstrated a preparation from the gangrenous tissue of the rabbit, showing the large gas-bacilli stained by Gram's method, while the symbiotic intrusive organism was counter-stained red with fuchsin. Contact preparations from anaerobic plate cultures showed a marked tendency of the bacilli to form angles like a capital V. Although the condition in the present case only came on post mortem, the bacillus had been proved by Welch, Flexner, and Nuttall to cause a spreading emphysematous gangrene in the living subject, and had also been found in various other conditions associated with development of gas during life or immediately after death.—Dr. KNOTT asked what was the relationship between this organism and that of anthrax in cases of quarter evil, or, as it was called in Ireland, "black-quarter," which occurred in young cattle.—Professor MCWEENEY, in replying, said that the bacillus coli produced gas in sugar media with just the same amount of vigour as the large bacillus of emphysematous gangrene. The bacillus to which Dr. Knott had alluded as being present in animals, was the bacillus of symptomatic anthrax, or Rauschbrand, known to the French as Chauveau's bacillus. It was an anaerobe closely allied to the one which he had shown, but differing from it in forming spores, in being motile, and in not being capsulated.

Dr. O'CARROLL read notes of a case of Exophthalmic Goitre in a girl, about 20 years of age. Post mortem the thyroid gland, which had been hardly at all enlarged in the neck, was seen to be greatly enlarged within the thorax, where it almost impinged against the arch of the aorta and probably did actually impinge upon it when both structures were distended with blood during life. The case was further noticeable, inasmuch as the thymus was so large as to reach down to the front of the pericardium, and it presented the structure of that organ found in infancy.

Dr. H. C. EARL showed a microscopical section of the Heart of a Woman who had died from poisoning by phosphorus. The section showed marked segmentation of the muscle fibre with great separation of the segments. There was no fatty degeneration of the muscles.

Mr. ARTHUR BENSON exhibited specimens of Choroidal Sarcomata mounted in glycerine jelly. One tumour had been removed from a man, aged 62 years, and was a pigmented sarcoma of the choroid. The second specimen was one of non-pigmented sarcoma of the choroid—a much rarer form of tumour than the pigmented. It occurred in a man aged 49 years.

Mr. J. B. STORY showed a case of Tuberculosis of the Conjunctiva, the patient being a boy, aged 15 years. A swelling of the lower eyelid had existed for two months. On everting the lid a small vascular tumour was found springing from the fornix. It looked uncommonly like a cock's comb and was of about the size of a filbert.

HUNTERIAN SOCIETY.—A pathological evening of this society was held on Nov. 28th, 1900, Mr. Dundas Grant, the President, being in the chair.—Dr. Glover Lyon showed a specimen of Total Atrophy of one Kidney and extreme atrophy of the other. The specimen was taken from a boy, aged 16 years, but apparently not older than 10 years, who until a few months before death had been able to follow his occupation of tin-worker. For a few months before admission he had suffered from drowsiness, headache, and diarrhœa. On admission he showed somewhat indefinite symptoms of contracted granular kidney, but there was no œdema present. Death had been due to coma. The interest of the case consisted in the fact that the patient had been able to live comfortably up to the age of 16 years when at death there was certainly not more than one-twentieth of the normal kidney substance available. The pelvis of the left kidney was greatly dilated with a small amount of fibrotic renal tissue superficial to it less than a quarter of an inch in thickness and about three-quarters of an inch long. The ureter was not dilated, but there was no opening of it into the badder. The right kidney was greatly diminished in size. There was great dilatation of the pelvis and the thickness of the renal substance was only from half to three-quarters of an inch. The distinction between the cortex and medulla was with difficulty made out, but the cortex seemed to be relatively very thin.—Dr. F. J. Smith showed the Lungs and Liver of a man, aged 48 years, who had died in the London Hospital. On admission his lungs showed very few physical signs of disease, a little prolonged expiration and an occasional click but nothing else; the sputum, however, showed numerous tubercle bacilli; the liver was much enlarged, it could be felt below the umbilicus and presented many hard nodules; it was not tender. The man was very much emaciated. The diagnosis made was carcinoma of the liver which was considered to be in itself sufficient to account for all the symptoms, though the bacilli in the sputum gave indications of phthisis. The man was very ill on admission and rapidly sank. The post-mortem examination showed that the upper half of each lung was riddled with tuberculous cavities and collections of tuberculous nodules; the liver was stuffed full of nodular masses of a carcinoma the appearance of which suggested that they were secondary, and further search revealed a carcinomatous ulcer of the œsophagus about two and a half inches long, the lower end of which was about three inches from the cardiac opening of the stomach; the ulcer had perforated the œsophagus and would have caused an abscess round the œsophagus had the patient lived.—Dr. Smith also showed the Stomach of a Woman, aged 24 years, the history of whom was that five years ago she had had an attack of severe "indigestion." From this she had never completely recovered, and two years ago she brought up about a teacupful of blood. From that time she had never been able to take any food without great pain. Every form of medical treatment had been tried in vain and finally Dr. Smith, on a diagnosis of chronic gastric ulcer, had taken her in to see what surgery could do for her relief. Mr. Mansell Moullin had opened the abdomen, and finding the stomach quite normal to the touch he had not proceeded further but merely closed the wound again. For five days she had done remarkably well but on the sixth day she was suddenly taken ill with collapse and extremely slow respiration, rapidly followed by death. At the necropsy absolutely nothing was found by the naked eye to account for death; the brain was carefully cut up, but showed no naked-eye changes; the heart, lungs, and kidneys seemed absolutely healthy. The stomach contained two or three large clots of milk, but as the patient had no pain before death Dr. Smith thought that overloading of the stomach was a very doubtful element; in fact, he was absolutely unable to account for death. The inside of the stomach showed an old radiating scar of ulcers on the upper posterior wall about three inches from the pylorus, a sufficient cause of the dyspeptic symptoms during life. Dr. Smith remarked that the case added one more difficulty to the numerous ones surrounding the treatment of alleged gastric ulcers, for in face of the symptoms and post-mortem appearances he did not know any means by which the likelihood of relief from surgery could be ascertained previous to exploration, and the fact of death, coupled with the entire absence of apparent causation, showed that there were still unexplained dangers in abdominal surgery. At the same time, considering the severity of the symptoms he was still of opinion that the right course had been pursued.—Dr. Smith also showed a Heart and Pericardium showing the effects of Adherent Pericardium. The specimen was taken from a man, aged 21 years, who had his first attack of rheumatism at the age of 20½ years. His history presented no points of special interest, the symptoms being those of valvular incompetence and cardiac failure. The necropsy showed the pericardium to be very adherent to the chest wall and universally so to the ventricular surface of the heart, so that the pericardial sac as such was entirely obliterated. The heart weighed 32½ ounces. Dr. Smith thought that such a degree of hypertrophy could not have been reached in five years if it were due to the valvular mischief only. He thought the specimen showed very well the remote dangers of rheumatic pericarditis.—Dr. David Ross showed a case of Congenital Obliteration of the Bile-ducts. The patient was the youngest of three children of healthy parents with no history of syphilis and was brought to Dr. Ross when six weeks old suffering from jaundice which had existed from birth. When born the child appeared normal and well nourished and continued to thrive for about a couple of months when she began to get gradually emaciated. The navel discharged for a month

before finally healing. The jaundice was very marked; the motions had been devoid of colour from the very first, and the urine was very deeply bile-stained. At two months the characteristic subcutaneous hæmorrhages began to appear at various parts, together with occasional melæna. On the right side the liver dulness extended almost to the level of the umbilicus and on the left to about an inch below the costal margin. When 73 days old the child died. At the necropsy the gall-bladder was found to be non-existent, being represented by a few fibrous shreds. The duodenal papilla was well formed, but a bristle passed only into the pancreatic duct and not into the common bile-duct. Microscopically it was seen that the change was due to a small-celled infiltration confined to the interlobular spaces rather than to the presence of much fibrous tissue between the cells. There was no new formation and no great distension of the bile-ducts.—Dr. W. H. Kelson, Dr. J. H. Bryant, Dr. Williams, Mr. J. H. Targett, Mr. Hope Grant, Dr. T. G. Stevens, and the President discussed the cases.

FORFARSHIRE MEDICAL ASSOCIATION. — An ordinary meeting of this association was held in the University College, Dundee, on Dec. 13th, 1900, Mr. C. S. Young, Vice-President, being in the chair.—Dr. Mackie Whyte read a paper on Recent Researches on Alcohol and their Effect on Treatment. He adhered to the views of Schmiedeberg in regarding alcohol not as a stimulant of functional activity but as a paralysing agent. This action on the brain and on muscle was gone over at some length, reference being made to the work of Kraepelin, Destrée, and others. There was no proof of a stimulating effect on the heart. Binz's experiments on the effect of alcohol on respiration were discussed. The effect of alcohol on the tissues was shown in various ways to be deleterious, the proof that it was a protoplasmic poison being considered to be fairly complete. While alcohol taken in moderate amount was to a great extent oxidised its food value must be largely discounted by its other effects. Their knowledge of metabolism was very far from being complete; what they wanted to know in regard to alcohol was what it did before it was transformed into water and carbonic acid. The bearing of these views on the treatment of various classes of disease was next described. The action of alcohol on acute febrile and infectious disorders was gone into at some length, pneumonia being taken as a convenient type.—The Chairman, in the discussion which followed, pointed out the interest such a paper had and referred to the effect of alcohol on the circulation and stated that it was his practice to use alcohol chiefly in tiding over a crisis.—Dr. J. W. Miller said that he agreed in almost everything with the paper. In his own practice he had been steadily diminishing the quantity of alcohol prescribed for patients, especially in acute cases, such as pneumonia and fevers. In pneumonia he never used alcohol largely and was of opinion that it should be used only in the strictest moderation. Dr. Whyte had referred to the danger of discontinuing alcohol suddenly in those cases where its bad effects were beginning to show themselves, but in 28 years' experience of prison practice in which alcohol was at once stopped on admission he had not found such a large number of cases of delirium tremens as one would expect if the practice referred to were dangerous.—Dr. R. Sinclair in his own practice adopted pretty much the same plan as Dr. Miller. In pneumonia the balance of evidence was entirely in favour of the withholding of alcohol until the crisis, and in the majority of cases even then many cases might do better without than with it. He was perfectly convinced of the absolute harmlessness of omitting alcohol altogether in the case of the majority of healthy individuals. In regard to the phthisical cases he entirely agreed with Dr. Whyte; phthisical patients who had been intemperate generally went downhill very rapidly, but with all deference he thought that there was another side to the question. It was, he said, very well known that if a patient with a tendency to phthisis developed the gouty habit it was very hostile to tuberculosis. In the case of young children with a tendency to waste and to take catarrhs readily a little alcohol disguised with bitter infusion so that it should be disagreeable was of distinct advantage in promoting digestion and assimilation. Obstinate neuralgias common in the aged were treated with advantage not only with quinine but with a modicum of alcohol along with it. He also thought that ether from the laboratory was not the same as volatile ethers in wines after fermentation and in bottle.—Professor C. R. Marshall agreed that alcohol was a protoplasmic poison and consequently practically toxic to all forms of tissue activity. It was not a stimulant to the brain and there was no scientific evidence to show that the heart was stimulated by alcohol; if it did have any effect it was an indirect one through the stomach. He did not think that Dr. Whyte had laid sufficient stress upon its local effects upon the alimentary mucous membrane. He thought that alcohol had a beneficent effect upon the digestion and did assist the assimilation of food. Alcohol was also a food sparer. It could replace to a certain extent some of the carbohydrate of the food. It was absorbed readily and was easily broken up in the system, but its power in this direction was limited. On the whole he thought that alcohol ought to be regarded as a drug and not as a food or poison except in a limited sense.—Professor A. M. Stalker considered that there was no shadow of proof that alcohol was a cardiac stimulant. He would be inclined under any circumstances to give a patient suffering from pneumonia the chance of recovering without alcohol. As a hypnotic he would use it in certain circumstances and considered it the safest with children.—Dr. G. A. Pirie considered that until physiology could speak with a more certain voice treatment of disease by alcohol must rest on a very insecure foundation, and indeed was dependent mostly upon clinical observation, which was steadily limiting the amount prescribed in many diseases and abolishing it altogether in some.—Dr. Whyte, in reply, stated that the extreme physiological dose was put down as two and a half ounces of alcohol, and that there was now a tendency to diminish and bring this down to about one ounce as the amount which a man could safely from day to day indulge in without producing degenerations. The fact of alcohol being a food-sparer was of very little importance. What they wanted to know was what were the other effects of alcohol; if it was burned up in the body, was it or was it not, as Schäfer said, a deleterious drug? He held that it was.—Professor Marshall said that he assumed it was a protoplasmic poison; that seemed to him to do away with its food value.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—An ordinary meeting of this society was held on Jan. 4th, Dr. F. F. Schacht, the President, being in the chair.—Several new members were balloted for and elected.—The Secretary read a letter from Mrs. Symons Eccles thanking the society for its letter of sympathy on the death of her husband, Dr. A. Symons Eccles, a Vice-President of the society.—Mr. J. Jackson Clarke read a paper on Some Surgical Phases of Rheumatoid Arthritis and Similar Affections. The conditions dealt with were chiefly deformities and included spinal curvature, various joint contractions such as hammer-toe and flat-foot, talipes equino varus with pes cavus from gouty or rheumatoid myositis, Dupuytren's contraction, and deformities due to paralysis from peripheral neuritis. Mr. Clarke dealt on the need of the coöperation of the physician and surgeon in the management of these conditions. In many of the cases instruments were of the utmost value in treatment. He thought that the surgeon should be able to prescribe instruments with as much completeness as the physician prescribed medicines. Cases and photographs illustrating the paper were shown.—The President thanked Mr. Jackson Clarke for a very interesting paper.—Mr. C. R. B. Keetley thought the subject almost too wide a one for an evening's discussion, more especially as it was hardly understood what was meant by rheumatoid arthritis. He thought it was generally understood to be some infection of the blood which tended to influence lining membranes of joints and their vascular tissues and which produced pain and inflammation but did not go on to suppuration; at the same time it profoundly altered the nutrition of the joint and surrounding tissues. It was generally taught that gout was the cause of Dupuytren's contraction, but he had had cases lately which had a clear rheumatic history. He thought that some cases of syphilitic or gonorrhœal infection were sometimes diagnosed as rheumatoid arthritis. Bad cases of flat-foot he often treated by Ogston's operation and he obtained a very good result thereby. In one extreme case he had excised the astragalus with benefit. He thought that severe cases might also be treated by excision of the tibia above the ankle-joint, but preferred Ogston's operation.—Dr. F. H. Alderson said he did not think that hammer-toe was always the result of rheumatism and he had had cases with no history of rheumatism at all. Much might be done with

mild cases of talipes by suitable light splints and massage and manipulations.—Mr. Clarke replied.—Dr. J. G. Pardoe then read a paper on the Use of the Retained Catheter in Some Lesions and Suppurations of the Male Urinary Passages. He said that in English literature relating to this subject there was a very inadequate account of a mode of treatment which was satisfactory, simple, and easy of application in certain diseases of the male urino-genital tract. He considered the application of the method first to the treatment and certain vesical conditions and, secondly, to morbid states of the urethra. It was most useful in all inflammatory conditions of the bladder in which pus was present in the urine. Constant drainage obviated the painful spasm present in these cases and allowed of frequent washing out of the bladder. Dr. Pardoe further advocated the use of the retained catheter in cases of complete prostate obstruction, congested prostates accompanied by hæmorrhage, and enlarged prostate complicated by stone in the bladder which necessitated the use of the lithotrite; in these cases one was able to more thoroughly evacuate the bladder of retained débris. He also urged its use in cases of suprapubic cystotomy, especially where primary suture of the bladder was performed. Cases of tuberculous and simple ulceration of the bladder were not favourable ones for this means of drainage and were often rendered worse by its use. He then described and advocated the more frequent use of the retained catheter in various urethral conditions, such as ruptured urethra, Syme's and Wheelhouse's operations, and more especially after the operation of internal urethrotomy. The majority of French surgeons, led by Guyon, insisted upon its use in this operation as a necessity. The points to be observed in carrying out this method were: (1) that the catheter should have a large lumen; (2) that it should have one or two large eyes; (3) that it be incompressible; and (4) that it should be capable of easy sterilisation. The best catheters to use were soft rubber ones, as Jacques' catheter or the best silk web catheters with two eyes. He insisted on the necessity of careful cleansing of the glans, prepuce, and meatus with some antiseptic previous to tying in the catheter which should not be passed too far. Four tapes should be tied on to the catheter and these fixed with a strip of strapping below the corona and the whole of the glans covered with antiseptic gauze. Pain resulting from a retained catheter was generally due to one of two causes: (1) intermittent or incomplete drainage, or (2) a badly fitting catheter.—The President thanked Dr. Pardoe for a very interesting and instructive paper. The practice suggested was in advance of ordinary teaching on the subject, and all present would be glad to feel that the use of the retained catheter was one which they could more freely fall back upon.—Dr. Alderson had found leeches to the anus very useful in cases of hæmorrhage from a congested prostate. He also advocated the use of boric acid internally when catheters were tied in as a means of keeping the urine sweet.—The President proposed a vote of thanks to Dr. Pardoe, which was carried.—Dr. Pardoe replied.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A special meeting of this society was held on Nov. 27th, 1900, when an address was delivered by Professor Clifford Allbutt, F.R.S., on the Clinical Bearings of High Arterial Pressure.—The annual dinner was held after the meeting, at which Professor Allbutt and about 70 members and guests were present.—The ordinary monthly meeting was held on Dec. 18th, Mr. P. E. Miall being in the chair.—Dr. William Mitchell showed: (1) A Cast of the Genital Region from a case of Inguinal Hernia after the operation for "radical cure" had been performed; and (2) the Eyeball from a case of Perforating Ulcer of the Cornea.—Dr. C. F. M. Althorp showed the following:—1. A patient on whom he had operated for Irreducible Dislocation of the Proximal Phalanx of the Index Finger. The dislocation had been maintained by the glenoid ligament. The patient had almost perfect use of the finger and was able to use it for writing. 2. A child, aged seven years, with Secondary Deposit of Sarcoma in the Temporal Region. The forearm had been amputated for periosteal sarcoma of the radius six months previously.—Mr. W. H. Horrocks showed a specimen of Strangulation of a Loop of Intestine through an Aperture in the Mesentery. The patient, a boy, aged 10 years, had a strangulated hernia which had been reduced under an anæsthetic. Pain and sudden collapse supervened a few hours after reduction of the hernia and the condition exhibited was found post mortem. The hernia had been successfully reduced.—Dr. A. Bronner showed: (1) Archer's Perimeter; and (2) a child whom he had operated on for Acute Empyema of the Frontal Sinus. The disease came on after scarlet fever and extensive caries of the bone was found at the operation.—Mr. Miall read notes on a case of Forced Delivery at the Seventh Month in Contracted Pelvis. The patient was 24 years of age and had been delivered two years previously by craniotomy. The pelvis was flattened and generally contracted, its measurements being: interior conjugate, three inches; distance between the spines of the ileum, eight and one-eighth inches; distance between the iliac crests, eight and a half inches; and external conjugate, nine and a quarter inches. An attempt to bring on labour was first made by introducing wood-wool and glycerine plugs into the cervix and also by injecting glycerine. No pains having occurred after four hours a screw dilator was introduced and the cervix dilated under chloroform until a medium sized Barnes's bag could be introduced. As soon as the hand could be introduced the membranes were ruptured and internal version performed. Delivery was soon effected and the child cried strongly. The uterus contracted well under pressure and the placenta was born 20 minutes after the child. The whole process, from the commencement of dilatation to the delivery of the placenta, only occupied one and a half hours. There were no spontaneous contractions of the uterus from first to last. The mother made a good recovery but the child died from debility at the end of 20 days. Mr. Miall considered that the procedure he adopted in this case was quite as safe and was more certain than the methods usually employed for inducing premature labour.—Dr. S. Johnston and Mr. R. Mercer discussed the case and Mr. Miall replied.—Dr. Bronner read notes on the Therapeutic Uses of Orthoform and Ferripyrin.—Dr. S. Lodge read notes on a case of Malignant Disease of the Œsophagus associated with Respiratory Obstruction in which both gastrostomy and tracheotomy had been performed. The patient was a woman, aged 60 years, with a stricture high up in the gullet. The stricture of the œsophagus was accompanied by abductor palsy of the vocal cords causing severe spasms of dyspnœa. The patient was alive and enjoying a fair measure of health six months after the gastrostomy.

NORTH OF ENGLAND GYNÆCOLOGICAL AND OBSTETRICAL SOCIETY.—A meeting of this society was held at Owens College, Manchester, on Dec. 21st, 1900, Dr. J. B. Hellier, the President, being in the chair.—Dr. D. Lloyd Roberts (Manchester) showed a Three Months' Fœtus and Placenta from a case of Ruptured Ectopic Gestation. Abdominal section was performed on account of profuse intra-peritoneal hæmorrhage. This bleeding was found to arise from the partially detached placenta and not from the ruptured Fallopian tube.—Dr. J. E. Gemmell (Liverpool) showed the Appendages removed by Abdominal Section from a case of Inflammatory Disease of the Tubes and Ovaries. The case was of interest inasmuch as the inflammatory masses occupied the pouch of Douglas and protruded through the vulval orifice, resembling at first sight a prolapsed retroverted uterus.—Dr. J. W. Martin (Sheffield) showed a Solid Ovarian Tumour removed from a girl, aged 17 years. The tumour weighed three and a half pounds and was non-adherent. Microscopically it was found to be a round-celled sarcoma.—The President gave an address entitled: "On Infection of the Genital Canal." He said that the study of the pathogenic organisms of the genital tract had brought their knowledge of puerperal diseases into a line with general surgical pathology, and the so-called "puerperal fever" was no longer the mystery which it was formerly held to be. They now knew that with aseptic precautions even the pregnant uterus and its appendages could be safely subjected to surgical operations. In a recently delivered woman they had a long sinus leading to a large wound surface. The walls of this tract were often bruised and had their vitality diminished, and in the fundus uteri was a collection of fluid and blood-clot, with portions of necrosing tissue—a choice breeding-ground for any micro-organisms which might effect an entrance. Further, the large plexuses of lymphatic vessels and the patent Fallopian tubes favoured an extensive invasion of the micro-organisms. The germs of puerperal fever were precisely those of ordinary surgical wound infection, and the conditions of success in modern midwifery were the same as those which

had revolutionised surgery—viz., personal asepsis of the surgeon and nurses, the sterilisation of instruments, and the minimum of interference and manipulation. The systematic cleansing of the genital canal before delivery had not given such good results as leaving well alone. The most important factor in the conveyance of puerperal infection was the hand of the attendant. The President drew attention to the great difficulty of obtaining sterility of the hands, as shown by recent observations, nor was it yet decided how soon they might safely attend a puerperal case after exposure of the hand to a septic infection. The frequency of puerperal infection was largely attributable to the unsanitary conditions of the patients, their clothing, beds, and surroundings. Recent researches had demonstrated the great resisting power of the tissues of the genital canal to infection, and there was no doubt that the large majority of cases of infection recovered spontaneously or with suitable local treatment. The importance of gonorrhœa as a factor in causing infection of the genital canal had been clearly shown in recent years and in former days there was little doubt that infection had frequently been conveyed directly from patient to patient by specula, instruments, &c. It was most probable that in health the genital canal was aseptic or at least contained no pathogenic organisms. The President also drew attention to the harmful effects of foreign bodies in the vagina, such as pessaries, and especially uterine stems, inasmuch as they seriously interfered with the bactericidal effect of the healthy vaginal secretion and so lead to infection.

BRITISH ORTHOPÆDIC SOCIETY.—The twenty-fourth ordinary general meeting of this society was held at the National Orthopædic Hospital, Great Portland-street, W., on Dec. 15th, 1900, Mr. D'Arcy Power being in the chair.—Mr. E. Muirhead Little showed a patient suffering from Infantile Paralysis of the Left Upper Extremity wearing an ingenious instrument which considerably aided the use of the limb.—Mr. H. A. Reeves opened a discussion on Congenital Defects of the Skeleton. Commencing at the skull and face, he passed rapidly over all important skeletal defects, laying stress on those which were amenable to surgical treatment. His remarks were illustrated by much material and a copious supply of photographs and radiographs. Dealing with the spine Mr. Reeves stated that cases of wryneck and lateral and anterior or posterior curvature were due to deficiency of parts of the vertebral bodies as shown by existing specimens, that the direction of the deviation was determined by whether the defect was lateral or in front, and that usually a wedge-shaped piece of bone was found detached just as occurred in latent deviation of the fingers and toes. The treatment consisted in keeping the neck and spine in a correct position so as to prevent further contraction of muscles and ligaments on the curved side. Hour-glass contraction in the thorax and congenital epigastric depression were to be treated by respiratory exercises and spinal manipulations acting through the ribs if the child were old enough to be taught. He pointed out that in the upper limb the high position of the scapula, whether single or double, was to be treated by manually depressing the bones so as to stretch the muscles, and said that though the malposition was called in Germany "Sprengel's malady" his paper on it had appeared in 1891 while Mr. Reeves had described it in 1885. He mentioned that exostosis of the vertebræ was often present. Intra-uterine fractures, rickets, congenital dislocations of the shoulder, and absence of the clavicles and bones of the upper limb were then dealt with, and also the treatment of club-hand. Finger deviations, syndactyly, polydactyly, brachydactyly, and megalodactyly and their treatment were gone into, and the statement was made that, as a rule, the flap operation for united fingers was not very satisfactory because of the inequality of the adjacent digits. Defects of the pelvis were usually secondary and had more gynæcological than orthopædic interest. In the lower limb absence or deficiency of the femur, congenital misplacement of the hip, coxa vara and coxa valga, absence or misplacement of the patella, genu recurvatum, and other knee displacements and their treatment were entered into. Absence, partial or complete, of the fibula or the tibia, fusion of the bones, and platycnemic tibia and their treatment were discussed, also the rare condition of congenital displacement of the ankle. Congenital amputations and the grooves formed by strangulation by the umbilical cord were alluded to, and the various deformities of the feet were described and their treatment discussed. Mr. Reeves also explained three new operations for paralytic calcaneus and calcaneo-cavus.—Mr. D'Arcy Power, Mr. Muirhead Little, Mr. C. R. B. Keetley, and Dr. A. F. Blagg joined in the discussion on the paper.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 20th, 1900, Dr. Wearne Clarke, the President, being in the chair.—The following specimens were shown. Dr. Sinclair White: (1) Sarcoma of the Scapula; (2) Sarcoma of the Fibula; (3) Carcinoma of the Intestine; (4) Deciduoma Malignum; and (5) Femur showing Central Necrotic Caries.—Dr. Wilkinson: (1) Stone in the Kidney; (2) Cystic Thyroid; (3) Rodent Ulcer; and (4) Carcinoma of the Mamma.—Mr. Connell (specimens from the Museum of the Pathology Department): (1) Secondary Sarcoma (Melanotic) of the Vertebræ; (2) Secondary Carcinoma of the Vertebræ; (3) Chest Wall and Right Radius from a case of Rickets; (4) Varieties of Inflammation of the Vermiform Appendix; (5) Sarcoma of the Lower Jaw; and (6) Sarcoma of the Metacarpus.—Dr. T. H. Morton: Drawings and Photographs.—Mr. Simeon Snell: (1) Carcinoma of the Eyeball; (2) Pedunculated Dermoid of the Conjunctiva; and (3) Epithelioma.—Dr. W. M. Robertshaw: Portion of the Lung of a Ganister Worker.—Dr. Godfrey Carter: (1) Spinal Cord (degeneration); (2) Fatty Heart (fatal chloroform anæsthesia); (3) Lardaceous Kidney; and (4) Atrophied Gastric Glands (pernicious anæmia).—Mr. Alfred Reckless: Micrococci in Pneumonic Sputum.—Dr. Gilmour: (1) Heart, Lung, and Liver from a case of Mitral Stenosis; (2) Tumour of the Thyroid; and (3) Porencephaly.—Dr. J. Robertson: Highly Charged Tuberculous Sputa.—Dr. A. Hall showed the following specimens from the collection of the Pathological Museum, University College: (1) Fibrosis of the Heart (syphilitic); (2) Heart (congenital syphilis); (3) Heart with large Thrombus on the Mitral Valve; (4) Heart with Ball-thrombus in the Left Auricle; (5) Heart with Calcareous Coronaries; (6) Bovine Heart; (7) Spleens, with infarcts, simple and malignant; and (8) Salivary Calculus.—Dr. Hall also showed various microscopical sections, including: (1) Rodent Ulcer; (2) Lupus; (3) Miliaria of the Skin; (4) Blood Films; and (5) Various Tumours, &c.—Dr. Hall also gave a short account of the material sent in for examination to the Pathological Department of University College, Sheffield, during the year.—Dr. J. Robertson read a note on the Work done at the Bacteriological Laboratory in connexion with University College, Sheffield, since its commencement. Courses of instruction for medical students, post-graduate courses, and diplomate of public health courses had been held. During the past 18 months 1605 swabs had been examined for various sanitary authorities from patients suspected to be suffering from diphtheria, nearly 500 specimens of blood had been examined for serum reaction, and 663 specimens of sputum had been examined for tubercle. In addition to this numerous articles had been received for bacteriological examination and certain research work was undertaken.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held on Jan. 3rd, when Dr. W. E. Jameson read a paper on Anthrax, with special reference to a case of malignant pustule which had recently occurred in his own practice. The source of infection was China skins and the diagnosis was confirmed bacteriologically. The only unusual symptom was suppression of urine lasting for 36 hours. The treatment consisted in excision of the pustule and the application of pure carbolic acid to the wound, with general stimulants internally. The patient died from exhaustion.—Mr. Wilton Mills mentioned a case in which the poison entered by a small burn on the cheek.—Dr. A. Wallace, Mr. G. W. Malim, and Mr. W. Stanwell also joined in the discussion.—Dr. Jameson also read notes on a case of Ovarian Cyst occurring in a phthisical patient. The cyst grew for over two years. The patient was then seized with abdominal pains, and profuse watery diarrhœa began and lasted for 11 days, during which the tumour gradually disappeared. Dr. Jameson believed that the cyst, the existence of which had been confirmed by Dr. A. Donald, had ruptured into the bowel, but although the patient died from phthisis 15 days later a post-mortem examination was not obtained and the theory remained unconfirmed.—Mr. S. T. Lord and Dr. Wallace discussed the case.

Reviews and Notices of Books.

Text-book of Physiology. By British Physiologists. Edited by E. A. SCHÄFER, LL.D. Aberd., F.R.S., Professor of Physiology, University of Edinburgh. Volume II. With 449 Illustrations. Edinburgh and London: Young J. Pentland. 1900. Pp. 1365. Price 42*s.*

THIS work is rather to be regarded as an encyclopædia than a text-book, for it contains an account of physiology which embraces every department of that science, whilst the several sections having been placed by the editor in the hands of writers whose attention has been specially occupied in developing the subject with which they have been intrusted secures a fulness and accuracy that would have been otherwise unattainable. Thus the Mechanism of the Circulation of the Blood has been written by Dr. Leonard Hill; the Contraction of Cardiac Muscle by Dr. W. H. Gaskell; Animal Mechanics and the Sense of Taste and Smell by Professor J. B. Haycraft; the Muscular and Nervous Mechanism of the Respiratory Movements and that of the Digestive, Urinary, and Generative Tracts by Dr. E. H. Starling; the Mechanical, Thermal, and Electrical Properties of Striped Muscle by Sir J. Burdon Sanderson; Nerve and the Physiology of Electrical Organs by Professor Francis Gotch; the Nerve Cell and the Cerebral Cortex by the editor, Professor E. A. Schäfer; the Sympathetic and other related Systems of Nerves by Professor J. N. Langley; the Spinal Cord and the Parts of the Brain below the Cerebral Cortex, Cutaneous Sense and the Muscular Sense, by Professor C. S. Sherrington; Vision by Dr. W. H. R. Rivers; and the Ears and Vocal Sounds by Professor John Gray M'Kendrick and Dr. Albert A. Gray.

It must strike all who read this volume that as physiology is becoming more and more a specialised branch of knowledge many lines of research which have been pursued with great zeal have apparently but a remote bearing on medical practice and are in themselves too abstruse for the ordinary practitioner to master, unless he have special proclivities for scientific research. Still, in the history of science many instances might be quoted where the cultivation of dry and arid fields of research has been rewarded by a harvest of interesting and useful results. It is well, therefore, that from time to time a general review of the state of physiological science, as taught and understood by its chief exponents, should be written. The present volume is to a very large extent occupied with the consideration of the nervous system, long articles being devoted to the nerve-cell, to the nerve-centres, and to the senses. There is, of course, a considerable quantity of original investigation by the several authors, but the bulk of the book is taken up with recent investigations in France, and especially in Germany.

One of the most interesting chapters is by the editor, Professor Schäfer, and is devoted to the cerebral cortex. In it is given, succinctly and yet clearly, the very considerable increase in our knowledge of the functions of the cortex that has accumulated in the course of the last 30 years. Some of the results of the application of modern methods of investigation are more than surprising. At first sight, for instance, it would not be thought possible that any rational idea could be obtained of the duration of action of a nerve cell of the cerebral cortex, yet there is reason to believe that it can be estimated with some approach to accuracy from the consideration of the waves that are seen in a graphic tracing of a voluntary muscle when made to contract by the influence of the will. The successive contractions are found to vary from 8 to 13 or even 20 in a second, 10 being the average. This number is also supported by the rate of contraction in shivering and that it is impossible to articulate at a greater rate than 11 syllables per second, hence it may be concluded that the average interval between the consecutive nervous discharges from the cortical cells is 0·1 second and the minimal interval 0·05 second, and that this rapidity corresponds with the impulses originating in the cells of the brain appears probable from the circumstance pointed out by Richet that it is impossible to *think* the act of articulation at a greater rate than this, and the same statement applies to the thinking the act of singing or of playing a series of musical notes. Professor Schäfer gives a comprehensive view of other phenomena that have been observed on stimulation of the cerebral cortex, including the experiments of I. Munk and W. G. Spencer showing the effects on respiration, and Professor Schäfer's own observations in conjunction with Dr. J. R. Bradford showing the effects on the circulation, on the pupil, on secretion, and on heat. The whole subject of localisation in the cortex cerebri is, as might be expected, very fully given, and shows how much has been done in this direction by the well-directed experiments of recent observers.

The volume opens with a long and carefully written article by Dr. Leonard Hill on the Mechanism of the Circulation of the Blood. The problem of the cause of the first sound of the heart seems to be no nearer solution than it was half a century ago. All seem to be agreed that the second sound is purely valvular, but Dr. Hill enumerates no less than nine events, each of which has been regarded as the efficient cause of the first sound, the sudden tension of the auriculo-ventricular valves being placed, perhaps without any significance being attached to its position, eighth on the list, though it is certainly the most important. The experiments of Wintrich with resonators long ago established the fact that the first sound is complex and really consists of two sounds, of which one is of higher pitch than the other, and hence it seems reasonable to maintain that it is due not only to the sudden tension of the auriculo-ventricular valves but to the friction of the vast mass of muscular fibres running in different directions over each other. Such events as the tension of the blood caused by a collision of the blood particles in the ventricles, the sudden collision of the ventricular contents with the column of blood in the aorta and pulmonary artery, and the rest may surely be disregarded, their contribution to swell the volume of the second sound being doubtful or altogether trifling. Dr. Hill, however, whilst admitting the two causes above-named as the efficient ones, seems inclined to think that the impulse of the heart against the walls of the chest may be an occasional and auxiliary cause. The article contains many interesting facts that have been established in late years partly by Dr. Hill's own labours and partly by those of others. For example, he points out that the phenomena observed in sphygmographic and manometric tracings present certain difficulties in their explanation. These discrepancies may be reconciled if it be clearly understood that the veins which surround the radial artery bear an important share in the production of the pulse; and, he continues, the condition of the veins must exert an important influence in all pathological states of obstruction of the circulation from pulmonary or cardiac disease.

In the succeeding article by Dr. Gaskell on the Contraction of the Cardiac Muscle the reader will find all that is at present known in regard to the augmentor and inhibitory nerves of the heart.

An interesting and valuable chapter, containing as it does the results of much original investigation, is contributed by Sir J. Burdon Sanderson on the Mechanical, Thermal, and Electrical Properties of Striped Muscle. The phenomena of the contraction of muscle under the influence of a continuous impulse or in a state of tetanus are considered; then the more complex conditions resulting from a single instantaneous stimulus, the graphic tracings being obtained both

by Fick's cosine lever and Blix's apparatus for recording the movements of the style attached to the muscle. Sir J. Burdon Sanderson believes that the wave of contraction travels in the muscles of the frog at about three metres per second and that in the rabbit the rate of propagation is 3·4 metres for the red muscle and 11 metres for the white. The different forms of isometric and isotonic curves of muscles—that is to say, of muscles attached at both extremities or free at one extremity and either unweighted or weighted—are given. Sir J. Burdon Sanderson's own experiments on the duration of the latent period of contraction in muscle are detailed in which he showed that instead of that duration being two- or three-hundredths of a second, as Helmholtz thought, it is not really more than three- or four-thousandths of a second. The characters of fatigue in muscle and its response to various forms of electrical stimulation are described in full.

We learn from Professor Starling's Muscular and Nervous Mechanism of the Respiratory Movements that from the results of researches and experiments made by several observers Flourens' *nœud vital* is very much more extensive than the small region in which that savant located the respiratory centre. It probably occupies a very considerable area of the *formatio reticularis* at the level of the lower part of the fourth ventricle. Speaking of the vexed question of the cause of the continuance of the respiratory acts after section of the vagi and the cord in the lower part of the cervical region and of the medulla oblongata just below the pons, that is, of nearly all sensory paths of excitation, the complex nature of the problem is rendered evident by the want of concordance in the results obtained by different experimenters. It is not as yet quite satisfactorily determined whether the pulmonary branches of the vagus transmit normally impressions which lead to inhibition of the respiratory movements, that is, to expiratory efforts or to inspiratory efforts.

Few chapters on physiology have undergone more extension than that dealing with the sympathetic system, and this subject has now been very completely considered by Professor J. N. Langley. The structure of the cells is given by Professor Schäfer in another article, but the details of the origin of this system from the spinal cord, the distribution and function of it, are all fully described by Professor Langley.

The chapter on the Muscular Sense by Professor Sherrington gives the various opinions that have been held on the nature of this sense—that, for example, of Bain and Helmholtz, which dispenses with peripheral organs and afferent nerves; that held by Schiff, that this sense has no apparatus of its own, but that it results from sensations derived from the sense organs of the other five senses; and thirdly, that held by Professor Sherrington himself, that the "sense" is based on a specific set of sensations obtained by specific sense organs in muscles, tendons, joints, and all the accessory organs of movement. From the results of sections causing degeneration of nerve fibres Professor Sherrington found that from one-quarter to one-half of all the nerve-fibres in nerves supplying muscle to be sensory. The peripheral sense organs are the Pacinian bodies, Golgi organs, and muscle spindles. Professor Sherrington makes some observations on the "knee-jerk" and holds that it is not a reflex act, but is, nevertheless, dependent on a reflex spinal arc, the afferent part of which is based on sense organs in the muscle itself and its appurtenances. It has been the subject of many investigations and Professor Sherrington has accumulated many facts concerning it. Its absence is often an indication of disease, yet in some persons who are apparently healthy the movement cannot be elicited. The special senses are very fully and admirably treated. Dr. Rivers gives at considerable length the views of Helmholtz and Tscherning on the nature of the accommodation of the eye but does not pronounce definitely in favour of either. In fact, the arguments seem nearly of equal weight for either theory. The volume concludes with remarkably complete and useful indices which must have taken much time and required the expenditure of much thought to make. Professor Schäfer may congratulate himself on having made a valuable contribution to English physiological literature.

A Text-book of Embryology for Students of Medicine. By JOHN CLEMENT HEISLER, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. With 190 Illustrations, 26 of them in colours. London and Philadelphia: W. B. Saunders. 1899. Pp. 405. Price 10*s.* 6*d.* net.

THIS work contains a plain, straightforward, and very intelligible account of the process of development in man. The early stages are, of course, chiefly drawn from the appearances presented by the egg of the fowl and lower animals and the description is generalised, but from the formation of the amnion and allantois the conditions of the human subject are kept steadily in view, and it is essentially the development of the human embryo that is followed. The drawings illustrating the text—so important in an embryological treatise—are numerous and have been well selected from His, Tourneux, Waldeyer, and others, but there are some original sketches and many diagrams which will prove of service to the student. The early stages are given in moderate detail and the mode in which the author introduces observations that have a direct relation to practice is to be specially noted.

The menstrual cycle of 28 days, for example, Dr. Heisler considers may be divided into four periods: the constructive stage, comprising from five to seven days, during which the mucous membrane of the uterus becomes to a marked extent swollen, the tissue more vascular, and the glands wider and longer; the destructive stage, which lasts about five days and commences with infiltration of blood into the sub-epithelial tissue, probably by diapedesis, which is followed by partial disintegration of the mucous membrane, exposure and rupture of the blood-vessels, causing the hæmorrhage; the stage of repair, occupying the three or four days following the discharge and characterised by the growth of new tissue; and lastly, the stage of quiescence, which extends from the close of the preceding stage to the end of the cycle. The relation of menstruation to ovulation and conception is briefly but very clearly given. The duration of pregnancy is given, of course, at ten lunar months, and it dates from the moment of conception; but since the ovum retains its vitality for about a week after its extrusion from the Graafian follicle, and since the spermatozoa may remain active for several weeks after their entry into the female genital tract, it is impossible to fix within a week or two weeks the date of conception even where there has been only one coitus. A similar relation of the history of the process of development to practice is shown in the account of the process of cleavage. Partial longitudinal division of the embryonic area, from which alone, the author has just explained, the body of the embryo is developed, results in the production of some form of double monster; its complete cleavage gives rise to homologous or homogeneous twins, which are twins of the same sex and of almost absolutely identical structure. Ordinary twins are developed from separate ova which may or may not have come from the same ovary. In regard to the formation of the mesoderm Dr. Heisler agrees with Bonnet and Duval, holding that the mesoderm originates from a double source, chiefly from the entoderm, but also from the ectoderm, since the cells giving rise to the part that grows from the region of Hensen's node are ectodermic. After its formation the mesoderm grows by the proliferation of its own cells independently of the ectoderm and the entoderm and the structures derived from it are connective tissue in

all its forms, including cartilage, fibrous and elastic tissue, bone, dentine, lymph, blood, muscle, all endothelial cells, the spleen, kidney, and ureter, the testis and its excretory ducts, the ovary, Fallopian tube, uterus, and vagina. Speaking of the allantois, after describing its mode of origin, he shows how it becomes a pedunculated sac lying in the extra-embryonic part of the coelom, the peduncle leaving the body cavity proper through the umbilical opening; how its walls are composed of entoderm and visceral mesoderm; how its blood-vessels develop in the mesodermic stratum; and how its union with the false amnion produces the true chorion. Dr. Heisler then continues: "The human allantois presents a striking peculiarity as compared with that of birds and reptiles; in man the allantois develops not as a free sac projecting into the extra-embryonic body cavity but as a mass of splanchno-pleuric tissue, which contains only a rudimentary cavity and which grows into the abdominal stalk, being guided by that structure to the false amnion." Illustrations of this are given. The function of the allantois is stated to be that it serves as a nutritive and respiratory organ until the formation of the placenta, its period of activity extending from about the fifth or sixth week to the third month; it also constitutes a receptacle for the fœtal urine, and it produces three structures of the adult organism, the urachus, the urinary bladder, and the first part of the urethra of the male and the entire female urethra. The chapter on the development of the heart and vascular system is very complete, as is also that of the alimentary canal and its appendages. The remaining systems are considered in the following order: the respiratory, genito-urinary, cutaneous, nervous, including the special senses, the muscular and osseous. In a tabulated chronology at the close of the book each of these systems is described as it appears every week up to the ninth week, and subsequently at the end of every month up to maturity. Throughout the work the author is careful to give explanations of the mode of origin of such deformities as cleft sternum, cleft palate, hare-lip, and ectopia of the intestines and bladder, and the reader will find definitions of many terms that have recently been introduced, such as prochorion, ameloblasts, dermal navel, paraxial mesoderm, and the like. There is an excellent index, yet "blastodermic vesicle" is omitted. It would be a convenience, as there are many references to figures, to give the page on which each is to be found, as much time is lost in looking for one perhaps 10 pages in advance. The work as a whole may be regarded as giving an excellent presentment of the present state of embryological knowledge.

Materia Medica for India. By C. F. PONDER, M.B., C.M. Edin., and D. HOOPER, F.C.S., F.L.S. Calcutta: Thacker, Spink, and Co. 1900. Pp. 356. Price 6*s*.

THIS volume has been issued as an Indian companion to the British Pharmacopœia of 1898, and contains, in addition to the official preparations, 350 of the better known Indian drugs, many of which the authors consider to be capable of employment as substitutes. The medicinal properties of the various substances are given in brief, and the authors acknowledge having used Sir T. Lauder Brunton's "Manual of Pharmacology, Therapeutics, and Materia Medica" as an authority here in many cases. We presume that the medicinal properties of the indigenous drugs, the use of which has not reached the west, are stated upon similarly good grounds. In some cases these properties are not familiar to us, and we should have liked to see some authority for the statements. The arrangement of the book is neat and practical. All preparations in the vegetable materia medica are placed in one article under the heading of the botanical parent, and in the same manner the active principles are discussed under the heads of their respective raw products. All the salts of a metallic substance are dealt with under their bases. The addition of tables of weights and measures and a few simple notes on pharmacy will make the book valuable to medical men not anxious to burden themselves with a multiplicity of text-books.

Studies in the Psychology of Sex. By HAVELOCK ELLIS. Philadelphia: F. A. Davis Company. Pp. 275. Price $2.00 net. (Sold only to Physicians and Lawyers.)

THIS volume contains three studies entitled the Evolution of Modesty, the Phenomena of Sexual Periodicity, and Auto-Erotism respectively. The first study is a really close inquiry into an important phase of modern manners. Many authors before Mr. Havelock Ellis have suggested that what we nowadays call modesty is exactly the most important factor in woman's sexual attractiveness to man, but no one has ever given such a multitude of examples in proof of the proposition that the woman of to-day's civilisation is not ashamed to be seen naked because she is naked, but only because she is without her weapons of seduction. The next section of the book—the study of the evidence that the sexual functions of man are periodic—is also interesting and displays its author as deeply read in many by-ways of physiology and psychology. We agree with him that it is not yet demonstrable that a sexual rhythm similar to that which occurs in woman occurs in man, but we do not think it nearly as probable as he does that the existence of such a cycle will be proved. The testimony of those willing to give it would be very untrustworthy, and the personal equation enters so largely, as we have recently had to point out, into the matter of sexual appetite that we cannot conceive any natural law regulating the human race. The last part of the book is devoted to an elaborate investigation into the causes of masturbation. This delicate subject is treated by Mr. Havelock Ellis with thoroughness and decency. Most of what he has written will be familiar to medical men because of the confidences that have been reposed in them, but the essay is very suggestive in its indications of advice and general treatment. Strictly medical advice, we are glad to see, it is not attempted to give.

This contribution to our comprehension of sexual psychology is to be sold only to physicians and lawyers. We trust that the publishers will take every pains to observe the restrictions of sale that they have laid down for themselves. Mr. Havelock Ellis has written a book that has its distinct uses, and he has done his work in a proper manner, saying clearly what must be said, and neither making mock-modest moans over the depravity of the human race nor relating "good" stories under the guise of scientific evidence. But his book must not be sold to the public, for the reading and discussion of such topics are dangerous. The young and the weak would not be fortified in their purity by the knowledge that they would gain from these studies, while they certainly might be more open to temptation after the perusal of more than one of the chapters.

Ulceration of the Bladder, Simple, Tuberculous, and Malignant. By E. HURRY FENWICK, F.R.C.S. Eng., Surgeon to the London Hospital, Surgeon and Pathologist to St. Peter's Hospital for Urinary Diseases, &c. London: J. & A. Churchill. 1900. 8vo. Pp. 85. Price 5*s*.

IT was not until the invention of the cystoscope that we had anything other than a post-mortem knowledge of ulceration of the bladder; and though the diagnosis of tuberculous or simple ulceration was occasionally made, yet the diagnosis was nearly always rather uncertain. Even with the aid of the cystoscope the difficulty of diagnosis is not at an end, for it is very difficult when ulceration is present to obtain the contents of the bladder in a perfectly clear condition, so that the state of the vesical wall may be

distinctly examined. The introduction of the cystoscope is liable to be especially painful when there is a tuberculous ulcer in the bladder and this does not appear to be generally due to any extension of the disease into the urethra.

Mr. Fenwick lays stress on the possible dangers of instrumentation in non-malignant ulceration of the bladder, and he shows that the viscus is extremely liable to tear, and he suggests that before the anæsthetic is administered the surgeon should ascertain how much urine the patient can pass at one time; then if an ounce be added to represent the residual urine the total should be about the quantity injected and withdrawn in washing. This is certainly a safe method, but equal safety is obtainable by limiting the pressure of the contents on the bladder wall to a safe amount. The pressure can always be exactly known by the use of a funnel and tube for filling the bladder. If the height of the funnel above the bladder does not exceed two feet the internal vesical pressure cannot exceed one pound on the square inch. If, however, a syringe be employed to fill the bladder it is quite impossible to gauge the pressure with any accuracy.

The author divides the non-malignant ulcers into "simple" and "tuberculous." The simple ulcers he again divide into "spontaneous," as in the solitary simple ulcer, and the "consecutive," as in those following on cystitis or prostatitis. Mr. Fenwick compares the solitary simple ulceration of the bladder to the simple ulcer of the stomach. He has met with it chiefly in young men about 20 years old. It gives rise to marked hæmaturia and frequent micturition and causes much puckering when healed. The prognosis of this ulcer is very good, and the author advises curetting in all except the most advanced stages.

The tuberculous ulcers are divisible into those which are primary and those which are consecutive to tuberculosis elsewhere. For the primary form Mr. Fenwick advises that sandal oil should be administered for about a fortnight to reduce inflammatory swelling, then five grains of hexamethylene tetramine in half a pint of hot water are to be given three times a day to render the urine acid and if possible aseptic. For the localised form then Koch's "new tuberculin" is to be used, and if after six injections the ulcer shows signs of healing then it may be left, but if not it is to be scraped, through a suprapubic incision in the male and through the dilated urethra in the female. If the tuberculous ulceration is diffuse, the author considers that no cutting operation should be carried out, but Koch's tubercuIin should be injected.

For malignant ulceration of the bladder in advanced cases Mr. Fenwick considers that "detrusotomy"—that is, removal of two-thirds of the detrusor muscle of the bladder by a transverse suprapubic incision—offers the greatest chance of relief.

The book deals with a difficult subject and contains many original observations and suggestions which deserve careful consideration from surgeons. A full discussion of the work would extend far beyond the limits of a review, but we have endeavoured to present the author's opinions on a few of the more important matters with which he deals.

LIBRARY TABLE.

Appendicitis and its Surgical Treatment, with a Report of 185 Operated Cases. By HERMAN MYNTER, M.D. Copenhagen, Professor of Clinical Surgery in the University of Buffalo, New York. Third Edition. Philadelphia and London: J. B. Lippincott Company. 1900. Pp. 226 and Index. Price 10*s.* 6*d.*—This book formed the author's graduation thesis at the University of Copenhagen. It is, in fact, a careful study and estimation of the evidence for and against the operative treatment of appendicitis. The anatomy, histology, etiology, pathology, classification, symptomatology, complications and sequelæ, diagnosis, prognosis, and treatment are all considered, and the author's conclusions are as follows:—"There is a point of time in every case of appendicitis at which recovery is possible by operation. The prognosis depends solely upon this point of time. ..... We cannot operate too early, we are often too late ..... the only reliable help is to be found in surgical treatment. The earlier the operation is performed the better is the prognosis and the surer the recovery—a recovery, too, which is radical." The book is a valuable and summarised compendium of the views of medical men up to the present time upon the important question with which it deals.

Rheumatism, Rheumatoid Arthritis, and Subcutaneous Nodules. By C. O. HAWTHORNE, M.D. Glasg., M.R.C.P. Lond. London: J. & A. Churchill. 1900. Illustrated. Pp. 53. Price 2*s.* 6*d.*—The greater part of this essay appeared in the columns of the *Physician and Surgeon*, and, as the author admits, the matter dealt with is doctrinal rather than practical. The subject discussed is the relationship of rheumatoid arthritis to other recognised rheumatic conditions, and inasmuch as no rigid line of distinction can be drawn between the so-called rheumatic nodules and the subcutaneous tumours which are found in cases of rheumatoid arthritis we are forced to the conclusion that either these nodules are not pathognomonic of rheumatism or that rheumatoid arthritis is only a modified manifestation of the rheumatic state.

Whitaker's Almanack. 1901. 12, Warwick-lane, Paternoster-row.—Like all the truly great "Whitaker" is at the same time modest. The title-page of his almanack merely states the following: "An almanack for the year of Our Lord 1901, by Joseph Whitaker, F.S.A., containing an account of the astronomical and other phenomena, a large amount of information respecting the Government, finances, population, commerce, and general statistics of the British Empire throughout the world, with some notice of other countries, &c., &c." As this incomparable work contains information upon every possible subject from celestial phenomena down to statistics of the Mormons, it will be seen that the "&c." comprises a great deal. We need say no more except that the present issue of the almanack is, if possible, better than any of its predecessors. It is really indispensable to all business men, and to our mind no one need be dull who has a copy by him to read.

Estudios Médico-Legales sobre el Código Civil Argentino. Por FRANCISCO DE VEYGA, Profesor de Medicina Legal de la Facultad de Ciencias Médicas de Buenos Aires, Cirujano de Ejército. (*Studies in Forensic Medicine according to the Civil Code of Argentina.* By FRANCISCO DE VEYGA, Professor of Forensic Medicine at the Faculty of the Medical Sciences of Buenos Aires, Surgeon to the Army). Buenos Aires: Libreria Cientifica de Augustin Etcheparebordа. 1900. Pp. 557.—This book is a sort of commentary upon the civil code of the Argentine Republic in so far, that is, as it deals with medical or allied subjects. Professor de Veyga commences by giving a short history of the code, the study of which is, he says, imperative as a preliminary to the study of legal medicine and, moreover, for every medical man, whether especially concerned with forensic medicine or not. The remaining chapters of the book are taken up by the consideration of the usual subjects treated in books of forensic medicine, such as pregnancy, viability, minors, marriage, and the like. There is a chapter upon deaf-mutes who are not considered by the Argentine code as capable for "acts of civil life unless they can be communicated with and make themselves understood by writing." Another chapter of interest is one dealing with such questions as the recovery of fees and the right of medical men to receive legacies from their clients. From this we learn that medical men stand upon the same footing as any other class

of society in being able to inherit or to receive gifts from their clients. The book is very clearly and simply written and should be of value to those who live under the laws with which it deals.

Herbert Fry's Royal Guide to the London Charities. Edited by JOHN LANE. London: Chatto and Windus. 1901. Pp. 389. Price 1*s.* 6*d.*—This, the thirty-seventh, edition of an admirable little book differs but slightly from its predecessors. Its aim, as the editor states in his preface, is to point out to the suffering poor, in a book so cheap that they can either purchase it or get access to it, the place where they may obtain relief; and, secondly, to help benevolent people who have money to give but are doubtful where to bestow it. It will certainly serve these purposes, as it contains details of charitable institutions of all kinds and in addition information about societies which can in no way lay claim to that name. But this last foible it shares with other guides to charities and the inclusion does not impair the usefulness of the book.

Illustrated Lectures on Nursing and Hygiene. By R. L. ROBERTS, M.D. Lond. Third Edition. London: H. K. Lewis. Crown 8vo. Illustrated. 1900. Pp. 213. Price 2*s.* 6*d.*—This book is published as a companion volume to "Ambulance Work," and its contents are arranged in conformity with the syllabus of the advanced nursing course of the St. John Ambulance Association. The two first editions of this work have been largely instrumental in teaching the qualified members of the brigade their duties in general nursing and the care of the sick and wounded. The solid fact that over 1000 men of the St. John Ambulance Brigade have left this country for South Africa as hospital orderlies, nurses, and the like, and have shown considerable efficiency in their work, bears witness to the excellence of the institution and the books of instruction whereby the members are taught, and of these books few fulfil their object better than Dr. Roberts's "Illustrated Lectures on Nursing and Hygiene."

A National Question: Army Reorganisation (reprinted from *Blackwood's Magazine*). Edinburgh and London: William Blackwood and Sons. 1890. Pp. 32. Price 4*d.*—Amid the shoal of books and papers called forth by the present war, this little pamphlet, reprinted from *Blackwood's Magazine*, strikes us as unusually worth reading. The author advocates a change in our military system by which the home army shall be maintained on such a footing that it shall be always ready to take the field on short notice. The present system is based on a policy technically known as "defensive," as briefly outlined in "The Army Book for the British Empire," issued officially in 1893; whereas the author contends that it should in principle be "offensive" in the sense that any defensive policy should include a provision for the home army taking the field immediately on the outbreak of war; and he points out the changes believed to be necessary in order to secure this. His arguments have no direct or special bearing upon the medical services. The author is evidently keenly in earnest about the views he advocates.

"*Who's Who*" *for 1901.* London: A. and C. Black. Price 5*s.*—The 1901 volume of this useful book is larger than that of last year, chiefly on account of the incorporation with it of "Men and Women of the Time," and biographies of all Companions of Orders not previously inserted. We notice that the list of names headed, "The Victoria Cross" is incomplete. No names are given of either privates or of non-commissioned officers, an omission which seems to us unfair. The book, however, will be found to be specially useful to journalists, for it contains all sorts of information upon the press, both daily and periodical. There are also details of matters which are constantly being referred to, such as the Church, Government officials, metropolitan and provincial magistrates, a complete list of public schools and the various societies and their secretaries. The biographies, which are mostly autobiographic, also tell the seeker after knowledge everything about everybody who has ever done anything important, and about some others as well. It would be easy to point to biographies that are too short and biographies that are too long, supposing that the relative importance of the subject was intended to be gauged by the length of his or her memoir, but as this is nowhere stated the only comment that is necessary is that the great people are the most reserved. "Who's Who" is a valuable compilation, as all journalists have found out.

Ambulance Catechism. By WILLIAM ROXBURGH, M.B., C.M.Glasg. Glasgow: G. A. H. Douglas and Co. 1900. Pp. 127. Price 1*s.* 6*d.*—This little work is business-like and to the point. It asks a long series of questions and gives the answers. There are no "padding" and no preface, two admirable omissions. It contains an index—a valuable addition, especially for rapid reference in emergencies. It is intended as much for practical use as a help in preparing for examinations.

JOURNALS AND MAGAZINES.

The *Medical Magazine* for January, 1901, contains a Contribution to the Study of the Intestinal Form of Influenza by Dr. Augustine Carducci of Rome, and translated by Dr. A. C. Miller. Six cases are detailed in which, after an initial attack of a few days, the patients for a month experienced an unusual course of illness. After the first three or four days, in which the symptoms were characteristic of influenza as it is most commonly seen and yielded to the usual remedies, the temperature rose again and for the next three or four weeks was raised daily to 38° C. for more than half the 24 hours, falling to normal about 5 P.M. and remaining so for some hours. No symptoms accompanied this febrile state, and we think that Dr. Carducci has by no means conclusively shown that the origin of the fever was in the intestinal tract. Judging merely from an account of the cases we should prefer to regard them as instances of the central disorder that we know is a common result of the influenza poison. Mr. J. Foster Palmer continues his learned and attractive articles on Modern Epidemics, dealing in this number with typhoid fever. In discussing the etiology of the disease Mr. Palmer makes some shrewd and very *à propos* remarks as to the difficulty of distinguishing between air- and water-borne infection when what is primarily water-borne becomes practically an air infection through the medium of soil-water evaporation. Mr. Palmer offers consolation to all classes of inhabitants in the reflection that if country dwellers enjoy the cleanest air the cleanest water is supplied to towns. This is, of course, through the deficiencies of drainage in the scattered dwellings of country districts. Mr. A. R. Whiteway writes upon imprisonment, contending for reclamation as the prime object rather than punishment, for greater utilisation of convict labour, and, what is of particular moment to medical readers, for consulting physicians in connexion with prisons, and, generally speaking, for more thorough and expert medical investigation of misdemeanants. The articles on Some Disorders of Menstruation are concluded. The discussion of the cause of amenorrhœa wanders freely into hypothesis. Few will follow the writer to the conclusion that amenorrhœa often results from interference with uterine nerve-supply due to the occurrence in childhood of "conflagrations in the regions of the tubes and broad ligaments." Practitioners, happily, are not familiar with frequent evidence in childhood of "conflagrations" in these parts. The public health section of the magazine presents some interesting conclusions upon vaccination gathered from Dr. Arthur Reynolds's Chicago Health Report. The opinions are

arrived at, from a wide experience, that vaccination immunises if used not later than three days after exposure to infection, also that a greater degree of immunity is conferred by daily repetition of the vaccination, and that this repetition should be practised until the first vaccination shows evidence of taking, which is usually on the fourth day. The foreign section includes a remarkable piece of advice from a German authority to the effect that for the sake of the nursing of future generations "marriageable men should swear to marry only girls with full bosoms." We do not see why marriageable men should be recommended to swear, nor are we prepared to admit that the "full bosom" is necessarily that from which a good milk-supply will be forthcoming.

The December issue of the *Veterinarian* is full of original and interesting articles. Mr. Alexander Meek, M.Sc., contributes the result of a study into the "Growth of Farm Ungulates," approaching the subject in the present chapters from the external sexual characteristics, and particularly drawing attention to the differences brought about by the operation of castration in the male or female. Professor Mettam records some clinical observations on echinococcosis in the horse and on carcinoma of the dog. The article on the Breeds of Dairy Cattle by Mr. Alford of the American Bureau of Animal Industry is continued and well illustrated. We regret to see in the obituary notice the name of Professor Williams, F.R.C.V.S., F.R.S. Edin., who has been for many years the energetic Principal of the New Veterinary College; his loss will be deeply felt by the veterinary profession and by agriculturists, amongst whom his name was widely known. "Science Notes" and "The Month's Progress" contain short summaries of work done recently in the scientific world and conclude the best number the *Veterinarian* has produced during the past year.

Knowledge for January, 1901, maintains its usual high standard. The question of the size of ocean waves is dealt with by Mr. Vaughan Cornish, and Photography in Natural Colours with an Ordinary Camera is the subject of an article by Mr. H. Snowden Ward. Natural history and astronomy have also a prominent place in this number. Perhaps the most interesting article is that by Mr. R. Lydekker on Monkey Hand Prints. A clue to the pattern formed in the palm seems, he says, "to be afforded somewhat strangely by the tails of such of the South American monkeys as are endowed with prehensile power in these appendages, confirmatory evidence being likewise afforded by the prehensile tails of the American opossums and tree-porcupines as well as by those of the Australian phalangers. In all these animals the naked grasping portion of the tail, which is situated at the extremity, is covered with papillary ridges and grooves precisely similar to those on the hands and feet of monkeys but invariably arranged in simple transverse lines across the tail so that in the act of grasping they would be parallel to the long axis of the branch around which the tail is coiled. Clearly these papillary ridges are primarily connected with the grasping power."

The *Leisure Hour* in its January issue contains an interesting appreciation of the work of the late Prebendary Harry Jones with regard to open spaces. The Rev. Harry Jones was well known by name to many of our readers as a strong and sensible man. He took an active interest in the Metropolitan Hospital Sunday Fund and in all social, sanitary, and municipal questions. In the treatment of the latter he was eminently sensible. He once wrote: "That which is good is of God, though it be but the sweetening of a drain," and the phrase exhibits the man exactly. As an example of his practical manner of watching the sanitary well-being of his spiritual charges, we quote the following:—

"A deputation came from the lower part of the parish to complain of certain evil smells proceeding from the gas-works there. I personally condoled with these complainants, but, somehow, their representations were ignored as groundless. The premises were inspected by officials and pronounced to be free from the nuisance objected to. I was sure that these gentlemen had gone at a wrong time, since the offensive smells were created at night. The sufferers brought an action against the gas company which was brought into court. Jessell was the judge, Henry James and Chitty were there ready to devour the witnesses for the prosecution who spoke to the nuisance and I shall not forget their look when I (to the surprise of the audience) was put into the witness-box and was able to say that I had spent the best part of one night squatting on the roof of a public-house which overlooked the gas premises and with my own eyes had seen the opening of the doors of the furnaces from which the bad odour had issued. We won, and I shook hands with those members of the vestry who were present and had taken the side of the company. They half enjoyed learning (for the first time) about the secret nocturnal session of their rector."

Clergymen of the stamp of Prebendary Harry Jones do much to make the Church of England a power in the land. We wonder that there is not more eagerness to prefer them to important ecclesiastical positions. "The Medical Profession for Women," with illustrations, is another article of interest in the same magazine.

New Inventions.

A NEW SYSTEM OF SEWER VENTILATION.

OUR attention has been drawn to a new system of sewer ventilation which appears to us to have the merit of simplicity and easy adaptation whilst being effectual in reducing to a minimum the noxious characteristics of sewer emanations. As is well known, sewer ventilation is on all sides a source of offence and perhaps of disease, but sewer ventilation must be provided in some way or other. At present the ventilation of sewers is allowed to take place in a very haphazard way by constructing openings to the sewer in the road. The degree of offence thus caused requires no further description. Sewer-air is characterised by a sickening smell which all instinctively avoid. Attempts have been made, and with some success, to overcome the nuisance caused by level road ventilators by constructing shafts. Although shafts remove the objection to the level ventilators and allow sewer-air to escape at some distance above breathing level, yet obviously the air is still poisoned. A number of devices have been suggested for purifying sewer-air, but most of them have proved impracticable. Messrs. Stone and Co. of Deptford, S.E., have devised an apparatus which can be placed in any convenient position in the upper part of the sewer to be ventilated. The purification is effected in the first place by the use of an injector the action of which depends upon a small jet of water delivered from the water main. Sewer-air with a quantity of fresh air is then drawn by injection action into the apparatus and thoroughly mixed. The mixture of sewer-air and air is then passed through a quantity of water maintained by the same jet at a given level in a tank and therein thoroughly scrubbed or washed. The overflow runs away into a flushing tank, where it can be used for flushing the sewers, or it can be allowed to run direct into the sewer. So satisfactorily is the purification effected that both bacteriological and chemical examination have shown that the sewer-air is in this way freed from its germs and from its offensive constituents. It is stated that 10,000 cubic feet of noxious gas can be drawn from the sewer thoroughly purified and then passed into the outside atmosphere at a cost of water consumed of about 1s. 6d. It is further said that the apparatus has given excellent results with what have hitherto proved to be most troublesome and offensive sewers in certain districts of London. As we have said, the bacteriological and chemical results of examination were satisfactory, but we should like to have learned of its efficiency also having been tested by observing the effects of the treated

sewer-air upon animal life. In a classic experiment it was shown that when rats which had been respiring sewer-air were inoculated with cultures of the typhoid organism they rapidly succumbed to typhoid fever, whereas the rats kept in the open survived the effects of the poison introduced. There can be little doubt that sewer-air predisposes the human subject to sickness and disease, and any means which can be found which will destroy its toxicity will undoubtedly remove a frequent source of sickness and materially reduce a factor in the mortality returns.

SOUTHALL'S MILK STERILISER.

THERE is a distinctly new feature in regard to the method of this milk steriliser, and while the apparatus is effectual for the purpose it requires a minimum of attention. The steriliser consists of a metal container into which is placed a small quantity of water. A perforated metal shelf with its concave side downward is placed in the water and serves to support the bottle of milk. The bottle is provided with a lever stopper. All that is necessary to be done is to fill a metal cup with spirit and place it under the container after lighting the wick. The cup holds exactly the amount of spirit sufficing for the sterilisation, which takes about an hour to be complete. The same cup also holds the requisite amount of water. The apparatus is then left to itself. After an hour it will be found that the supply of spirit has been consumed and the temperature of the milk throughout will be about 160° F. The apparatus, in a word, provides for a kind of steam jacket round the bottle of milk, the quantity of spirit directed to be used being exactly adjusted for the attainment of this temperature and for the sterilisation of the milk. The apparatus is convenient, simple, and effective. It is made by Southall Brothers and Barclay, Limited, Manufacturing Chemists, Birmingham.

THE BATTLE OF THE CLUBS.

THE NEWCASTLE MEDICAL UNION AND THE MINERS.

THE Northumberland miners are admirably organised, not merely for trade-union purposes, but also for coöperative and political purposes. Miners have shown their strength by returning two of their own class to Parliament, Mr. John Wilson, the Member for Mid-Durham, and Mr. Charles Fenwick, the Member for the Wansbeck Division of Northumberland. No one personally acquainted with these representatives of the working miners can do otherwise than render homage to their integrity and their ability. It is necessary to take into account such salient facts as these before the more recent, and we fear less disciplined, organisations of the medical profession enter upon a struggle against the trade union of the Northumberland miners. The Newcastle papers announced that the Newcastle Medical Union has unanimously decided that the present rate of pay of the colliery surgeons working under the contract system is insufficient. They demand an increase of 50 per cent.—namely, 9*d*. instead of 6*d*. per fortnight. Undoubtedly, of all miners those of Northumberland are the most fortunate. In no other coal-fields are the wages so high and the hours of labour so short. The ideal of the eight hours' day has been surpassed, for the Northumberland miners generally work only seven hours a day. It is true that there is a dark side to this bright picture, as the lads or youths who prepare the work for the men remain in the mines for a longer time. But in spite of this drawback, if any class of miners can afford to pay their medical advisers a higher tariff than usual it is the miners of Northumberland. Indeed, this seems to be recognised by at least a part of the miners themselves. The colliers engaged along the Tyne banks, at the Montagu Pit, and in the pits in the neighbourhood of Lemington have accepted the terms proposed and granted the increase. Those of Prudhoe and neighbourhood are still considering the matter, but it seems as if a struggle may arise in the other districts. The Eden Colliery, Leadgate, and the Busty Pit hands of the Consett Iron Company and all miners connected with three other pits have already decided to refuse to accede to the demands. Nevertheless, the Medical Union has served notices on all he miners, and the medical practitioners have declared that they will cease to give their services under the contract system unless the increase is granted. This, therefore, may lead to a strike on the part of the colliery surgeons. We hope, however, that such an extreme course may be avoided. In the face of an undisciplined, unruly crowd a strike is sometimes necessary, for there are then no means of arguing the matter out. In the present case the miners are so well organised and are represented by such able men that it should be possible to negotiate, and this in a satisfactory manner. The miners have themselves done so much by organisation to improve their position, that they must of necessity sympathise with the efforts made by the members of the medical profession to follow their example. It is said that imitation is the sincerest form of flattery, and therefore there should be a fellow feeling between the Medical Union and the Miners' Union, and they should be able to come to terms in a friendly spirit. As this has been already done in some districts we sincerely hope that this good example will be followed in other parts of the county.

THE SPRINGBURN (GLASGOW) RECHABITES AND THEIR MEDICAL OFFICER.

Dr. J. A. Wilson of Springburn is entitled to the sympathy of the entire medical profession. He is a victim to the abuses which we have so often and for so long denounced. For 15 years he has been the medical officer of the Rechabites. At Springburn there is an adult tent and also a juvenile tent. In 1899 he had to make 450 visits to the members of the adult tent at their own homes within a radius of three miles. He had further to give 803 consultations in his surgery and to supply 530 bottles of medicine. In 1898 there was a greater amount of sickness, involving 578 visits, 721 consultations, and 714 bottles of medicine. Taking the last and most favourable year, Dr. Wilson received only about £65 for his services. At the ordinary rates charged in the district he should have received £120. The members of other societies in this neighbourhood pay 4*s*. a year, and the tramway servants pay 5*s*.; the Rechabites, however, only pay 2*s*. 6*d*. For their juvenile tent they only allow a halfpenny a week, or 2*s*. 2*d*. a year; and as there is no examination on admission sick and weakly children are enrolled. Dr. Wilson appealed to the Rechabites asking that the subscription paid by the adults should be raised to 4*s*., that the children should be examined before admittance, and that the subscription should also be increased. The Rechabites replied that they would allow the children to be examined before admission, but would not increase the subscription paid for them nor make any allowance for the time and trouble of examining them. As for the adults, they consented to raise the fee from 2*s*. 6*d*. to 3*s*. per annum, and this was the only concession made. Dr. Wilson finds that on an average each adult member suffers one week's illness per annum, and even 3*s*. for one week's medical attendance is a very meagre remuneration. Nevertheless, he consented to accept this if the pay for children was also raised to 3*s*. or if the children's tent was given up. All the medical practitioners in the neighbourhood were informed as to the details of these negotiations, and with one exception they loyally supported Dr. Wilson, refusing to become candidates for his post if he gave it up. Unfortunately there was a weaker vessel found and he consented to do the work at the conditions laid down by the Rechabites. If he is severely ostracised by the local medical profession he will not be able to complain. It is time practitioners should be made to feel that it is a breach of trust to their fellows thus to undersell a member of the profession. If medical practitioners tamely acquiesce in such unfair competition there is no reason why it should stop, and the abuses will increase and the position will drift from bad to worse. Cannot the medical practitioners of Springburn agree to form a medical union to be federated ultimately with other similar unions? Isolated efforts, however gallantly made, are predestined to failure. There is no strength except in union.

HABITUAL DRUNKARDS.—The want of more provision for habitual drunkards under the Inebriates Act of 1898 is obvious. The home provided some time since by the London County Council for women who are committed for three years accommodates only 100 persons. It is to be enlarged and adapted for 80 more persons at a cost of £20,000.

THE LANCET.

LONDON: SATURDAY, JANUARY 12, 1901.

"Let us now Praise Famous Men."

IN another column will be found an account of a scheme for raising a memorial in the form of a statue to one whose name is probably unknown to the majority of the inhabitants of these islands—namely, WILLIAM GILBERT. Born in 1540 he was the son of the Recorder of Colchester, and having graduated M.D. of the University of Cambridge he became physician to "that bright occidental star," Queen ELIZABETH, and successively censor, treasurer, and president of the Royal College of Physicians of London. By his great work "De Magnete, Magneticisque Corporibus, et de Magno Magnete Tellure, Physiologia Nova," he laid the foundations of the science of magneto-electricity which was in after years to bear such fruit at the hands of OERSTED and FARADAY. And now some 300 years after his death his medical brethren in Colchester are about to erect a statue to his memory, a movement which redounds greatly to their credit.

We congratulate the medical men of Colchester upon their desire to do honour to their great townsman, while the incident may surely give us all cause for serious thought when we consider how very few memorials, whether statues, medallions, or pictures, of our great scientific heroes are to be found in this country. Take the metropolis for example. There are statues of generals and admirals, of statesmen and political economists, of kings and queens, but in the city which has commemorated in statuary such examples of royalty as JAMES II. and GEORGE IV. there is no statue to HUNTER. DARWIN, OWEN, and HUXLEY live in marble or bronze in the Natural History Museum, and though few, comparatively speaking, see them there the site is an apt one. JENNER has his statue at Kensington-gardens; once it stood in Trafalgar-square, but apparently without a word of protest it was moved to a secluded glade in the west of town. The name of HARVEY lives for ever in medical memories, but there is no public monument in London to him, and the only existing authentic portrait, a picture attributed to CORNELIUS JANSEN, has never been seen, as far as we know, outside the walls of the Royal College of Physicians of London. The Harvey Grammar School in Folkestone is not a foundation in memory of the discoverer of the circulation of the blood, but was founded by his brother, Sir ELIAB HARVEY, who endowed the local charity for tanning nets and sails with "cutch"—namely, catechu. The works of our great medical men are, it is true, commemorated by means of official lectures, but these do not impress the public mind. HUNTER is probably better known to the majority of average persons than any other man of science, owing to the splendid picture of him by REYNOLDS, and we doubt whether the face of another medical man of all the famous British physicians and surgeons would be in the least recognised by the public.

Pictures and statues are, as was said long ago, the books of the uneducated, and our profession loses in the popular eye by having no objective reminders of the good done by our leaders. Not one of our hospitals in the metropolis is dedicated to the memory of a great physician or surgeon. The French have their Trousseau Hospital, but our Harvey or Sydenham hospital is still to be built. Physicians and surgeons may have desired no fame while they lived. In many instances they certainly did not receive it, but rather blame and ignominy. Even after death they have in some instances—as, for example, that of Sir THOMAS BROWNE—not been allowed to rest quietly in their graves. The commencement of a new century might well be the starting point for erecting memorials to some of our notable scientific men, not in museums, but in the street or the square. New hospitals when founded should bear the names of famous medical men, in association, may be, with that of the founder. New streets are about to be cut between the Strand and Holborn and in other prominent parts of London. It would be an admirable movement on the part of the medical profession to raise a fund for the erection of one or two statues to our neglected chieftains, and as every item of the body politic profits by the work done by our fathers in science we think that the public would follow suit. In the provinces the example of Colchester can be followed, and the medical men of any locality which once gave birth or nurture to a medical hero will deserve well of their profession if they make a move to keep that hero's memory green.

The Buildings of the New Royal Infirmary at Glasgow.

THE managers of the Royal Infirmary at Glasgow have decided to celebrate HER MAJESTY'S long and prosperous reign by rebuilding the Royal Infirmary. No more fitting method of honouring the memorable era of QUEEN VICTORIA'S reign could have been devised or one more likely to give pleasure to the gracious Sovereign of our islands; and yet we have heard in several quarters that what the Jubilee Committee—the body to whom the carrying out of the scheme has been committed—propose to do runs a great chance of being unsatisfactory in many directions. Several correspondents have warned us that the proper preliminary steps to secure a good design for the rebuilding of the Royal Infirmary have not been taken by the Jubilee Committee, so that it is not certain that the public of Glasgow will obtain the best article for their money. It may appear too late in the day to say a word of protest, as a design for the new building has now been definitely accepted by the Jubilee Committee and a sketch of it has been reproduced in the *Glasgow Herald*. But on the chance of the contract not having been signed and sealed and that there may be yet time for the Jubilee Committee to reconsider the course they have taken, we say these few words. They must not be regarded as a criticism of the design which the Jubilee Committee have

chosen, but only of the methods by which they have set about making their choice.

The Jubilee Committee appear not to have invited tenders publicly but to have asked certain gentlemen to send in designs for the new building. At the same time they obtained an assessor, with distinct qualifications for the office, to advise them as to what plan should be chosen. The first proceeding was unsatisfactory, for there was no guarantee that all the persons invited were particularly fitted to build an infirmary. Of the 10 gentlemen or firms from whom an architectural design was requested three reside in London, two in Edinburgh, and five in Glasgow, and while all have claims to be considered first-class architects their names are not equally well known as specialists in hospital work. As the committee, however, themselves submitted plans to the architects they may have considered too much special knowledge unnecessary. The second proceeding, the enlisting of the services of an assessor, is only a good one if they follow his advice. This the committee have not done. Mr. R. ROWLAND ANDERSON was the assessor and his report was published in the *Glasgow Herald* of Jan. 3rd, 1901. Out of the 10 designs it appears that he set aside four in a preferred class. Of these he selected one, bringing to a focus his opinion of the relative merits of the designs by considering among other things the following practical points: the use that it was proposed to make of the site, the amount of sunlight the buildings would receive, and the architectural treatment of the building as a commemorative memorial of the Queen's Diamond Jubilee. The Jubilee Committee completely rejected their assessor's advice and chose not the design that he placed first, nor even one of the four on his selected list, but a fifth of which in his report he only remarks that "it closely follows the committee's plans."

We do not wish to appear ungracious to the Jubilee Committee, who no doubt have been at trouble and pains for the good of the community according to their lights, and who are, we believe, responsible, directly or indirectly, for a large proportion of the money raised for the new hospital. But we would ask them to consider whether they are wise in jeopardising the value of the infirmary by not taking every possible preliminary step to see that what they are about to build is exactly what is wanted—that it is both the best and the cheapest that can be got for the money. In the face of the fact that they have neglected the advice of the assessor, they should set themselves right with the public for whom they are working. They should obtain from their medical staff an opinion upon the design of the new hospital which they have accepted and they should then make every attempt to modify the design according to the accurate knowledge of the men who will have to do their scientific work within the walls of the building. We are glad to learn that the committee intend to publish the designs of the unsuccessful competitors side by side with the design which has met with their approval, and it would be well that the estimated cost of each building should be appended to the designs. The cheapest building is not necessarily the best, but if the Jubilee Committee can demonstrate in the way we suggest that they have selected a plan with reasonable regard for economy and presenting no shortcomings from the medical point of view they will have a very good answer to any criticism of their action. But if it should turn out that they have approved a design which in the eyes of practical builders does not make the best use of the available space, which is not the one chosen for them by their expert adviser, which has no special economy to recommend it, and which their medical staff think might be improved upon, sooner or later the city of Glasgow may hold them responsible for any shortcomings discovered in the new infirmary.

The Enfield Isolation Hospital.

THERE are many duties, both statutory and moral, which devolve nowadays upon a district council, and it will perhaps be generally accepted that one of the most responsible duties thus devolving is provision for the isolation of the infectious sick. Primarily, such isolation has for its object the protection of the public health, but the actual treatment of the sick cannot by any means be regarded as a secondary matter. Inasmuch as, at least, moral suasion is often exercised by the officers of the sanitary authority with the view of inducing parents to allow their children to be sent to the isolation hospital, the accommodation provided at such a hospital should be in every sense satisfactory. Above all, perhaps, it is necessary that such an institution should possess the confidence of the public for which it caters, for without this confidence the hospital cannot prove a success. It is desirable that each patient who leaves the wards of the hospital shall be so mentally constituted in regard to the institution that he shall look back to his sojourn there with pleasure and regard the staff as some of his best friends.

We therefore regret to see that the management of the Enfield Isolation Hospital has laid itself open to criticism in the local press. Confidence in its administration is likely to be shaken and its public utility diminished. The institution in question has accommodation, it appears, for some 80 patients and the average number of patients has been, we are informed, about 50. Scarlet fever, diphtheria, and enteric fever are treated therein, but there is as yet no resident medical officer, the patients being attended by the medical officer of health, who engages in private practice and who resides some three miles distant from the hospital. He is in telephonic communication with the institution and can, it is alleged, reach it in about 20 minutes—if he be at home when the request for his attendance arrives. If he is out he has, we gather, arranged with one of his colleagues in the town to make the necessary visit of urgency. It is, of course, understood that the medical officer of health visits the hospital at least once daily. Critics of the hospital regard this arrangement as unsatisfactory, and they point to a death-rate of 25 per cent. among the diphtheria patients in justification. This percentage refers to 12 deaths from diphtheria, and it is alleged that several of these were moribund on arrival—a condition of affairs which we ourselves have often witnessed at hospitals considerably larger than the one with which we are now dealing. It is, however, the fact of diphtheritic patients being admitted into the Enfield

Isolation Hospital which makes us unhesitatingly agree with those who advocate the appointment of a resident medical officer. In our view, if there is no such officer, cases *in extremis* and requiring immediate tracheotomy must not be sent into the hospital. Antitoxin will, we know, do much when used early in the disease, but it is not of such great value later when it is reasonable to assume that the medical practitioner has applied the remedy and that it has already failed in its effect. We cannot decide between the rival statements in connexion with the Enfield Isolation Hospital, but we are in a position to affirm that the practice of sending in patients for operation is by no means unknown to us, and all hospitals which take in diphtheritic patients should, in our view, provide for such emergencies. We are, of course, perfectly aware that the children of the poor have not always a medical man at their immediate call—nor, indeed, have the children of the rich; and it is clear that the provisions for obtaining medical aid at the Enfield Isolation Hospital are far better than those possessed by many of those who are likely to become inmates of the institution. Telephonic communication is as yet by no means common between patients and their medical adviser, and the family medical man may obviously be absent when a message arrives. These things are alleged in defence of the arrangement by which telephonic communication with the medical officer of health takes the place of the services of a resident medical officer, but the conditions instanced are not quite parallel. When as many as 50 patients, some of whom are suffering from diphtheria, are gathered together in an institution to which people are often induced to go, a resident medical officer should, we think, always be appointed.

Other allegations made against the Enfield Isolation Hospital are, for instance, that no nurse is despatched with the ambulance which brings the patients from their homes, and that the patients, when discharged, have perforce to reach their homes as best they may. Both these are matters of detail which may well be considered by the management, but in regard to the ambulance, which, by the way, is a modern and well-constructed one, an attendant always appears to accompany it, while in regard to the latter point, that of discharge, the same allegation applies to the hospitals of the Metropolitan Asylums Board. As a general rule, patients when discharged from a fever hospital are quite capable of reaching their homes without danger or discomfort, and it has to be remembered that they have probably been much in the open air during their sojourn at the institution. Moreover, in rural districts during inclement weather the exercise of a little common sense in postponing, where necessary, the discharge, should go far to meet the difficulty raised, and in the case of very young children or children in arms, some suitable provision for traversing long distances should naturally be made. As regards the future, the hospital committee have asked the medical practitioners of the district to indicate upon the certificate of notification whether or not the patient is in a suitable condition to be removed to hospital, and in furnishing this information regard will doubtless be had to the accommodation provided. This seems to us to be a very reasonable request, and it is to be hoped that there will be no difficulty in complying with it. Yet another cause of complaint is that parents are only informed of the condition of the sick in the event of their becoming seriously ill, but such an inconvenience can easily be remedied by placing the hospital in telephonic communication with the district offices, and perhaps other convenient centres, in order that the not unnatural anxiety of parents may be allayed without application to the hospital itself. We suggest to the management of the Enfield Isolation Hospital the desirability, in the interests of all concerned, of taking into serious consideration the points here referred to.

Annotations.

"Ne quid nimis."

DEATH FROM SUFFOCATION AFTER A DENTAL OPERATION.

A PARAGRAPH of a distinctly misleading nature has appeared in several lay contemporaries which states that a patient at Newport, Mon., died from the effects of "laughing gas" during a dental operation. The facts of the deplorable case, of which we gave a brief account last week, are, we believe, correctly stated as follows. The patient, a healthy miner, went to a dentist's rooms to have 11 teeth extracted under an anæsthetic. The dentist, a Licentiate in Dental Surgery of Ireland, administered nitrous oxide and ether, a nurse, but no medical man, being present. The removal of the teeth was successfully accomplished and sponges without attachment outside the mouth were used to press on the gums to check the hæmorrhage. The deceased sat listlessly in the dental chair for two or three minutes after the completion of the operation, then sprang to his feet, drew in a deep breath, and gasped for air. As signs of asphyxia were plainly evident the dentist felt digitally for any obstruction in the air-passages and finding none commenced artificial respiration. A medical man was sent for and on his prompt attendance he found the patient deeply cyanosed, lying upon the floor, and the dentist performing artificial respiration. The pupils were widely dilated and life appeared to be extinct. After pulling forward the tongue and again employing artificial respiration, the medical man examined the back of the throat with his finger and felt externally with the view of discovering if any foreign body was lodged in the air-passages. Remedies were used, but without effect. A necropsy was made on the following day and a sponge was found lodged below the vocal cords. The obvious lessons to be gathered from the above narrative are twofold. We have more than once urged the desirability of the presence of two qualified medical men when only a trifling operation has to be performed under an anæsthetic. It is even more necessary when the operator is a dentist not possessing a surgical qualification that a duly qualified medical man should be with him to give the anæsthetic. No man can with safety to his patient administer an anæsthetic and operate single-handed. But further, there is in every case in which an anæsthetic is given a liability to accident, and at any moment tracheotomy or some other purely surgical procedure may be required to meet emergencies arising as a result of the operation or of the anæsthetic. Is a dentist competent to deal with such emergencies? We do not mean is he legally justified in giving an anæsthetic; that is a matter beside our present contention, but we ask, is he by his education and experience able to perform in a satisfactory manner the surgical operations which may be required as a result of a sudden emergency? We submit that he is not. His armamentarium will in nine cases out of ten not contain

a set of tracheotomy instruments, and it is not in the least unlikely that he has never performed the operation. In the case of ether or chloroform certainly, and we should add in that of nitrous oxide, a dentist would be well advised if he refrained from giving the anæsthetic, and he should under no circumstances undertake so grave a matter without the aid of a surgeon. The second lesson is one of practice. As we understand the case, the man was apparently recovering from the narcosis and the sudden appearance of cyanosis with dyspnœa could point to only one cause—the occlusion of the air-passages by a foreign body. The dentist and the medical man appear to have recognised this, although the latter as he came late upon the scene was possibly put off his guard by the absence of knowledge of the course which the symptoms had run. Artificial respiration was obviously useless as no air entered the lungs, and tracheotomy was not performed. This operation might have saved the man's life if it had been done in time—that is, if the surgeon had been present from the beginning of the proceedings.

A SMOKELESS UNDERGROUND RAILWAY.

THE proposal to adopt electric traction on the Metropolitan District Railway has been thoroughly supported by the shareholders of the company, and we are not surprised, since they must feel that all prospect of income is doomed by the fact that better means of travelling underground are at hand, while the public are sick of the experience that is offered to them by the existing underground steam trains. These are exceedingly unhealthy and exceedingly dirty, and apparently the attempts that have been made at ventilation have produced no practical results. The use, therefore, of smokeless traction is the only chance, it seems to us, of making the old underground railways wholesome and of saving the enterprise from absolute financial disaster. It cannot be denied that this system is the most useful line in London, and once wipe away the reproach as to the filthy state of its tunnels and railway carriages it will undoubtedly secure a big *clientèle*. We cordially welcome the decision that electric traction is to be used, but at the same time we are curious to know how it is proposed to meet the difficulty of trains of other systems running upon the lines. Thus the Midland, the Great Northern, the London and North-Western, and the Great Western railway companies, all overground systems, have running powers on the underground railway. Would the steam-engine be detached somewhere and an electric engine be hitched on? This would, of course, mean delay.

QUACKS AND ABORTION.

AN inquest concluded at Huntingdon on Jan. 2nd shows that the trade in quack medicines which are liable to be taken by pregnant women in the hope of procuring miscarriage has not yet ceased; that newspapers are still, whether knowingly or not, the means of advertising such nostrums; and that the compounds sold are apparently capable of causing the desired effect, subject to the reservation that they must be taken in very large quantities. That the death of the person so procuring abortion upon herself is a not unlikely sequel to her temerity also stands revealed. In the Huntingdon case the facts proved at the inquest differ in no material particular from those which have been brought out in many of the inquiries that were more common before recent prosecutions, and before our articles on the subject had called attention to the danger of selling would-be abortifacients and publishing advertisements of them. The woman upon whom the inquest was held had died from acute general peritonitis following miscarriage. Before death she had admitted taking constantly for about three weeks, with the object of procuring abortion, certain pills the advertisement of which she said that she had seen in a newspaper. She had been advised to take the pills, she said, by a male relative who, having been duly cautioned by the coroner, decided not to give evidence. The pills on analysis by Dr. Thomas Stevenson were found to contain iron or steel, aloes, colocynth, apiol, and strychnine, the majority of which ingredients, it will be remembered, figured in several of the compounds analysed by us in our inquiry into "Quacks and Abortion."[1] Dr. Stevenson added in his evidence that the pills analysed by him were not such that, taken in accordance with their printed label, they would be likely to produce miscarriage, but that taken as the deceased had apparently taken them they might have that result. It is always possible that legal proceedings may follow upon such an inquiry, and we therefore withhold further comment. We note, however, that the father of the deceased seems to have reproached the medical man who was called in by her when it was too late to save her life, with not having at once informed him of the cause of her condition. The coroner, Mr. C. B. Margetts, promptly and firmly supported the medical man in the position which he had taken up, pointing out that as long as it was possible that the woman's life might be saved he was the custodian of her secret, amounting to the confession that she had committed a criminal act, and that, so far from his having any duty to communicate this to her relatives, it might have been his duty to keep it as a professional secret from the knowledge of everyone. On her death becoming imminent, the coroner added, the medical man's position changed, because it was then evident that an inquiry must take place into the causes of it; and on such an occasion, when the patient can no longer suffer by the divulging of her secret, publicity followed by the fullest inquiry makes for the public good and for the protection and warning of other women.

WHEN IS AN IMPROVEMENT NOT AN IMPROVEMENT?

A CORRESPONDENT writes from Bournemouth:—"Public opinion in this place has lately been greatly excited over an 'Omnibus' Bill which the corporation proposes to introduce during the next session of Parliament. Much of it is only of local interest, as it deals with such matters as electric tramways, widening roads, &c.; but one clause is concerned with the acquisition by the corporation of a large open space, the Horseshoe Common, as a site for 'municipal and other buildings.' This proposition involves practically the destruction of one of the principal 'lungs' of the town and is therefore of the greatest interest to all those medical men who have been in the habit of sending their patients to this really delightful health resort, as I hope I may call our town although I live in it. The plot of ground, 14 acres in extent, is well known to all visitors to Bournemouth. It is in the very centre of the town and is a bit of wild moorland, surrounded by fir-trees and covered with gorse, bracken, and heather. As far as I know, no such bit of unadorned nature exists in the centre of any other town in the kingdom. By an Act of Parliament, obtained by the corporation so recently as 1897, two acres of this ground at its lower end were given up to the corporation as a site for the municipal buildings, but it was expressly stipulated that the remaining 12 acres should (for 99 years) be reserved for gardens and pleasure-grounds. '*L'appétit vient en mangeant*,' however; and it has grown so rapidly that now the corporation desires to devour the whole of the space. What may be its immediate intention is not declared, but the clause in question would

[1] THE LANCET, Dec. 10th (p. 1570), 17th (p. 1651), 24th (p. 1723), and 31st (p. 1807), 1898, and Jan. 21st (p. 182), Feb. 4th (p. 327), March 11th (p. 717) and 25th (p. 856), April 1st (p. 906), June 24th (p. 1738), July 8th (p. 111) and 15th (p. 174), and Dec. 2nd (p. 1540), 1899

undoubtedly give it power to erect any building it pleased upon the site. Already a free library, baths and wash-houses, and a terminus station for the Great Western Railway have been mentioned as possible 'improvements' of the common. Numerous petitions and memorials on the subject have been addressed to the council and to the ground landowner, and have been signed by the most prominent of the medical practitioners here, but, so far, they deal chiefly with the burdens that will be charged upon the rates under the new scheme. Surely the question of the injury that will be inflicted upon the public health of the town is more important, while the lowering of the deservedly high reputation of Bournemouth in the eyes of our medical colleagues throughout the kingdom may, directly and indirectly, cost the community more than is implied in the raising of rates." Thus our correspondent, and we have only to say that we agree with him cordially. Every municipality should endeavour to provide itself with good premises, for it is expected to be as far as possible an example of the cleanliness and order which it exists to maintain. But a municipality should not house itself well at the expense of the best interests of the inhabitants of the place under its charge, and the corporation of Bournemouth will have to make out a case of absolute necessity if it wishes to justify the proposed destruction of Horseshoe Common. A distinguishing feature in a place with the reputation of Bournemouth should not be lightly obliterated, and we trust that organised opposition to the scheme of the corporation will be set on foot. If in the face of this resistance the corporation can show that its scheme is necessary for the well-being of Bournemouth it will be justified in proceeding despite of sentiment; otherwise, however fine the buildings which it erects, it will have perpetrated an act of Vandalism.

EPIDEMICS OF SMALL-POX.

OUR sanitary laws, including the provision of a system for the notification of the chief infectious diseases and for their isolation, have the disadvantage of throwing us somewhat off our guard as to the risks we run. This is especially so in the case of small-pox, which is no sooner detected than it is isolated severely and all persons exposed to the infection are isolated too and revaccinated into the bargain. But in spite of all such laws we are reminded that small-pox is still small-pox, and that it will sooner or later assert itself in the absence of efficient vaccination and revaccination on an epidemic scale. Our Paris correspondent told us in THE LANCET of Nov. 24th of a recrudescence of small-pox in that city, where in ordinary times, owing to the vaccination laws being obligatory, there are very few cases. In 1899 there were only four deaths. In 1900 came the Exhibition and an influx of foreigners. From Jan. 1st to the end of May there were 15 deaths, from June 1st to Nov. 11th there were 100 deaths, and our correspondent reported in THE LANCET of Dec. 22nd that 17 deaths had occurred in the previous week—as high a rate as any recorded since the beginning of the epidemic, and this in spite of vigorous measures of the police for promoting free revaccination and the opening of stations at all hospitals and at most of the *mairies*, which were thronged all day long. Again, the *Medical Record* of New York of Dec. 8th states that a nest of small-pox patients had been discovered by the Board of Health in West Sixty-ninth-street. Between 30 and 40 patients were found and removed to hospital. Our contemporary adds what, of course, we expect to read, that the result of the discovery and its publication in the papers has been a vaccination boom of no mean proportions. The publication of such facts may serve to restore the reason of some people and their power to form a fair estimate of the situation of this country with its ever-accumulating millions of unvaccinated people and its constant contact with New York and Paris. No system of sanitary police yet discovered can be relied on to protect unvaccinated persons or persons who have not undergone proper revaccination. Cases of small-pox occur unexpectedly. The sufferers move about in a state of undefined and perhaps unsuspected malaise for days, infecting others as they go along, till, as in New York, a nest of cases has accumulated. We should be failing in our duty if we did not give editorial prominence to such risks. But in the present mood of English intelligence on the subject we do not expect that anything short of an epidemic will drive people to the vaccinator. Then they will run with undignified haste when it may be too late. In the meantime all fair and sensible people will see that the epidemics we refer to, and all epidemics of small-pox, are only controlled by revaccination efficiently performed.

A MODIFICATION IN OPHTHALMIC TEST-TYPES.

DR. E. PRAUN of Darmstadt has proposed an ingenious substitute for the types generally in use for the purpose of testing the sight.[1] He observed that some school-children and also a railway engine-driver whom he had occasion to examine succeeded in learning the ordinary test-types by heart, so that they could name the letters without being able to see them distinctly, and thereby made their vision appear to be better than it really was. In order to counteract this artifice Dr. Praun suggests that the use of letters of the alphabet as test-types should be discontinued and substitutes for them two thick parallel black lines of unequal length joined together by their ends, some of them at an angle of 45° and others at a right angle forming L. These radiating pairs of lines he regards as the hands of a clock, and his sheet of test-types consists of 47 such pairs of lines of different sizes placed within circles, arranged in two squares of 9 and 36 figures respectively and 2 separate figures. Each of these squares is mounted on cardboard and rotated into different positions, so that the most retentive memory would be unable to remember all the possible combinations and the reality of the test would be assured.

THE PSYCHOSES OF ENTERIC FEVER.

IN a recent issue of the *Münchener Medicinische Wochenschrift* (Nov. 20th, 1900) Dr. Deiters gives an account of his observations made at the asylum at Andernack on the various psychoses occurring in typhoid fever. These psychoses he divides—following the lines laid down by Kraepelin—into three groups—viz., first, the initial delirium attributable to the specific toxins or ferments circulating in the patient's blood and acting on the brain; secondly, the psychical disturbance of the pyrexial period attributable to the action of toxins and of the high temperature; and, thirdly, the post-febrile psychoses associated with the stage of convalescence and the condition of general bodily and cerebral exhaustion during this stage. In illustration of the initial delirium he records two cases occurring in children (one male and one female) of neurotic parents, the symptoms being those of acute mental confusion (Verwirrtheit) developing on a basis of hallucinations. This form of mental confusion constitutes the culminating point of a series of prodromal symptoms, the chief of which are restlessness, dulness, and apathy, and wet and dirty habits, the total duration of these symptoms being about 10 days. The pyrexial period then sets in and is marked by the acute psychical disturbance mentioned. The distinctive clinical symptoms of enteric fever—viz., rose spots on the abdomen and chest, splenic enlargement and tenderness,

[1] Tafel zur Bestimmung der Sehschärfe mittelst der Uhr. (Sheet of Diagrams for the Estimation of the Sharpness of Vision, arranged on the Principle of a Clock-face.) Wiesbaden: J. F. Bergmann. Glasgow: F. Baumeister. Price 1 mark 20 pfennig.

and Widal's reaction with the blood—were found in one of the patients, a male, while the diazo-reaction of the urine was established in the case of the female patient. The latter case ended fatally and a necropsy revealed typical enteric ulcers in Peyer's patches in the large intestine, and right-sided fibrinous pleurisy. Dr. Deiters comments on the clinical importance of recognising that such delirious manifestations occurring in a neurotic child at the onset of fever should make the physician suspect typhoid fever, and considers that treatment in bed should at once be adopted in view of the possible gravity of the case.

THE ASTLEY COOPER PRIZE.

As will be seen by an advertisement in our last issue, the next triennial prize of £300, under the will of the late Sir Astley P. Cooper, Bart., will be awarded to the author of the best essay or treatise on "The Pathology of Carcinoma and the Distribution and Frequency of the Secondary Deposits, corresponding to the Various Primary Growths." The competition is open to everyone except the staffs of Guy's and St. Thomas's Hospitals and their relations, but the essay must not be the production of two or more authors, and essays, written in English, must be sent to Guy's Hospital, addressed to the physicians and surgeons, on or before Jan. 1st, 1904. It is possible that the successful essay will be printed in the Guy's Hospital Reports, but this will in no way prevent the author from publishing it elsewhere after obtaining permission. Further particulars as to the conditions of competition and the like may be obtained on application to Dr. Newton Pitt, Guy's Hospital, London, S.E.

RADIOSCOPY OF THE MEDIASTINUM.

IN a paper[1] read at the International Congress of Electrology and Radiology, Paris, 1900, Dr. Mignon, after pointing out the difficulty of examining clinically the mediastina, divides his subject into three parts: (1) the anterior; (2) the posterior; and (3) the lateral oblique methods of examining the mediastina with the x rays. Under the first division he calls attention to the shadow cast by the thymus gland in children up to the third year. He then describes a shadow that is occasionally seen in radiographs of the adult chest situated on each side of the manubrium sterni and which extends obliquely upwards and outwards towards the axillæ and says that this shadow corresponds to the large vascular trunks. With this explanation we cannot agree. The shadow in question is found on stereoscopic examination to be outside the chest and corresponds to the anterior axillary fold. Dr. Mignon then goes on to the consideration of the heart shadow and points out that its situation, independently of pathological displacements (dexiocardia, pleurisy with effusion, &c.), is not always the same, the position being different in the standing from the recumbent position. He might have added that no two heart shadows are exactly alike. Radiographically one man might be known from another by the shadow of his heart. We quite agree with Dr. Mignon's view that the volume of the heart cannot be estimated by a screen examination only. Dr. Mignon thinks the pericardium is not visible on a screen examination, but says that in some skiagrams the observer may be able to distinguish beyond the limit of the heart shadow a lighter shadow that corresponds in position to the pericardium. We fully agree. Light streaks rather than shadows are often seen running parallel with the right and left borders of the heart, which in the dead subject, with lungs removed, clearly correspond to the borders of the pericardium. Dr. Mignon's paper is open, however, to some criticism. In discussing the position of the shadow thrown by the aortic arch and the changes under which it goes in aneurysmal dilatations Dr. Mignon makes no mention of the stereoscopic method of examination. He appears to be unacquainted with this important means of diagnosis, which has been rendered easy of application since Mr. Mackenzie Davidson invented the stereoscopic screen. In the second part of the paper Dr. Mignon deals with the examination of the posterior mediastinum and the detection of enlarged bronchial glands and aneurysms of the thoracic aorta. He maintains that the x rays are the only means of diagnosing accurately an aneurysm of this part of the aorta, which a good many clinicians will consider too sweeping a statement. For the diagnosis of abnormalities and diseases of the œsophagus Dr. Mignon recommends the swallowing of metallic balls attached to strings as preferable to the metallic sound in cases where hæmorrhage or perforation of the œsophagus is to be feared, but in our opinion the suggested manœuvre might be as dangerous as the method which it is designed to supersede. The third part is the most valuable portion of the paper: that is, the lateral oblique method of examining the mediastina. It is well known that a strictly lateral view of the chest, either with the screen or photographic plate, shows nothing very definite. Dr. Mignon's method appears to us to be a valuable one. It consists in getting an oblique view of the chest either with the screen anteriorly or posteriorly, so that we have a lateral oblique view anteriorly and posteriorly. By this method Dr. Mignon says a clear zone is seen bounded as follows: below it is limited by the convex shadow of the diaphragm, in front by the shadow of the heart, behind by the shadow of the vertebral column, which includes those of the aorta, vena cava, and œsophagus. If the aorta be the seat of an aneurysm the anterior border of this shadow is not regularly vertical. This clear zone is somewhat triangular in shape. Dr. Mignon proposes to call it the retro-cardiac triangle. By the lateral oblique method we see that the heart is not in actual contact with the anterior chest wall—a clear space is seen between them corresponding to the anterior mediastinum. Dr. Mignon claims that by this oblique method of examination pathological changes in the mediastina may be discovered which would be missed in an anterior or posterior examination only. Valuable as this method may be we still think that it is not superior to the stereoscopic method of examination, by which means we obtain the third dimension in space. Although we have found some fault, the paper is an extremely interesting one and should be read by all interested in radiography of the chest.

[1] L'Examen du Médiastin par la Radioscopie et la Radiographie, by Dr. M. Mignon (of Nice). Paris: G. Steinheil. 1900.

THE LOGIC OF A CORONER.

FROM the *Liverpool Post* of Jan. 4th we learn that on the previous day an inquest was held by the county coroner at the St. Helen's Town-hall, on the body of Mary Ann Teresa Ronchetti, aged 64 years, wife of the caretaker of St. Joseph's Roman Catholic Schools. According to her husband's statement the deceased had suffered from paralysis for 18 months. Early on Sunday, Dec. 23rd, she fell out of bed and fractured her leg. Mr. P. J. O'Keefe, who was summoned as a witness, said that he was called in to see Mrs. Ronchetti on the day of her accident and found her suffering from bronchitis, fracture of the left leg, and cardiac syncope. He ordered her removal to the Providence Hospital. In the course of the proceedings the coroner produced Mr. O'Keefe's certificate, which ascribed the woman's death primarily to apoplexy and bronchitis, and secondarily to compound fraction of the leg with cardiac syncope. On being asked whether the compound fracture had accelerated death in any degree, Mr. O'Keefe said that he scarcely thought that it had done so, and that the bronchitis alone was

sufficient to account for death. Upon this the coroner appears, according to the newspaper report, to have censured him severely, giving it as his opinion that if the fracture of the leg had nothing to do with the death it should not have been mentioned in the certificate. In vain Mr. O'Keefe explained that he had mentioned the fracture in order to comply with the instructions of the Registrar-General. "If I had not done it," he said, "I might have been in the wrong. Even though you cannot absolutely connect things with the cause of death you are bound to put them down." Upon this followed an angry altercation between the coroner and the witness. Addressing Mr. O'Keefe, the coroner is reported to have said, "You and I have differed before, and we differ again now. I did give you credit for having a logical mind, whatever else you have. I am trying to drive some logic into you," &c. We have not space to follow the coroner further in his criticisms. We would, however, remark in passing that whatever may be the qualifications that the learned coroner possesses as a teacher of logic, his arguments, as reported in the local newspaper, fail to impress us with his skill in the application of that science. We trust that on reflection the coroner will see it right to apologise for his discourteous conduct towards a medical witness who, in spite of the coroner's opinion to the contrary, appears to us to have honourably done his duty. We would remind the coroner that a compound fracture of a limb is a very serious injury, quite sufficient of itself to cause death under certain circumstances, especially in the case of a paralysed woman 64 years of age. We do not know what instructions the authorities at Somerset House may have issued in such cases, but we are convinced that if Mr. O'Keefe had omitted to state in his certificate, in addition to the primary cause of death, the fact that his patient had sustained a dangerous injury of this kind, he would have incurred a very serious responsibility for which as a practitioner of medicine he would have been justly censurable. The statement of the fact of injury could do no harm, but its suppression might conceivably have led to a miscarriage of justice.

MR. SHAW-LEFEVRE AND THE LLANDAFF COMMISSION ON THE LONDON WATER-SUPPLY.

WE had the pleasure lately to record the facts that Mr. Long, the President of the Local Government Board, has undertaken to give his immediate attention to the question of the metropolitan water-supply, and that he has publicly expressed his wish that the Metropolitan Boroughs and the extra-metropolitan Authorities, the bodies chiefly interested in this question, should give him their views as to whether it is desirable that any changes should be made in the present arrangements with regard to the water-supply, and if so should state what form these changes should take. Mr. Long's appeal has apparently displeased Mr. G. Shaw-Lefevre who, in a letter which appeared in the *Times* of Dec. 28th, makes a violent attack on the report of the Llandaff Commission—"I would suggest to the President of the Local Government Board that in the interval between this and the year 1902, when he has undertaken to introduce a Government Bill on the subject, he should appoint another Royal Commission to inquire into the scheme of the last one—a commission this time '*de lunatico inquirendo*.'" This brief citation will suffice to show the spirit in which Mr. Shaw-Lefevre's letter is written. We do not propose to deal at length with the various points raised by Mr. Shaw-Lefevre, but as he writes as an interpreter of the Llandaff report we feel it necessary to point out some mistakes into which he has fallen in regard to the matter. The mistakes are fundamental. The Llandaff Commission amongst other things were instructed to report "whether, having regard to financial considerations and to present and prospective requirements as regards water-supply in the districts within the limits of supply of the metropolitan water companies, it is desirable in the interests of the ratepayers and water consumers in those districts that the undertakings of the water companies should be acquired and managed either by one authority or by several authorities, and if so, what should be such authority or authorities." The Llandaff Commission reported that a Water Board should be appointed, that it should be a permanent body, that the members should be selected on account of their business capacity and, if possible, their knowledge of matters connected with water-supply. Mr. Lefevre complains that this scheme was not "ventilated" by the Commission. The Commission were not appointed to ventilate a scheme but to draw up a scheme. This they did. In the course of their inquiry the Commission thoroughly "ventilated" a scheme propounded by the London County Council. In their report it would not be too much to say that the Commission did not content themselves with "ventilating"; they even had the hardihood to "blow upon" the scheme of the London County Council. We have already at some length summarised the Llandaff report, and we have not scrupled to point out its weak points, but the letter of Mr. Shaw-Lefevre is unjust and ungenerous to members of the Commission. Had he been present at all the sittings of the Commission or had he carefully read the shorthand notes of the evidence we are convinced that he would not have written in the spirit of his letter to the *Times*. According to general rumour Lord Llandaff himself drew up the report, and however this may be, the lucidity and ability displayed in it are undeniable. The late Major-General Scott, the Water Examiner to the Local Government Board, was able to explain to the Commission all the intricacies and difficulties of the question, and Lord Llandaff examined the witnesses with the greatest thoroughness. On careful winnowing, much of the evidence was found not to be weighty and much of the time of the Commission was thereby wasted by witnesses. In such conditions a lazy or weak chairman might have been deceived or might have become irritable. But in the whole of this long inquiry we can recall no single instance in which Lord Llandaff administered a reproof which was not entirely deserved.

A MEDICAL TRIBUTE TO THE FATHER OF ELECTRICAL SCIENCE.

THE members of the medical profession at Colchester have combined to erect a full-length marble statue of Dr. William Gilberd (or Gilbert), the famous physician to Queen Elizabeth, whose work, "De Magnete," published in 1600, laid the foundations of electrical science. The importance of Gilberd's researches can scarcely be exaggerated. As Galileo said of him, he is "a man of enviable greatness," and the medical profession may justly hold his name and reputation in the highest possible honour. Gilberd was born in Colchester, where his father occupied the position of Recorder. He showed his regard for his native town by describing himself on the title-page of "De Magnete" as "Guilielmus Gilbertus Colcestrensis." He died in Colchester and was buried a few yards only from his birthplace, in the church of Holy Trinity, where his monument remains. The statue which is to be erected in his honour will be placed in a niche in the main façade of the new Town Hall at Colchester, a handsome building now being erected from the designs of Mr. John Belcher, A.R.A. The cost of the statue will be not less than £150, and towards this sum Mr. Henry Laver, F.S.A., the senior medical practitioner of

the town—who is acting as treasurer—has received £130, entirely contributed by the medical men of the borough or its immediate neighbourhood. The medical men of Colchester have done honour to themselves and their profession by their prompt and generous response to the appeal, issued less than a month since by Mr. Laver. As Gilberd's fame is a glory to the whole medical profession, and, indeed, to the whole English-speaking race, it is possible that there may be some of our readers who would like to help the medical men of Colchester—not a very numerous body—to secure the required total, or, still better, to obtain an even larger sum, so that a statue may be erected worthy of one of the greatest of Englishmen. This will, strange to say, be the first statue ever erected of this pioneer in scientific research, the father of the electrical science which has done so much to transform the history of the world. The stipulated minimum, £150, seems but a small sum for such a purpose, and we hope to hear that it has been exceeded.

THE REMOVAL OF SNOW FROM THE STREETS.

THE methods of removal of snow from our streets, like the problem of the prevention of fog in the metropolitan atmosphere, prove a hardy annual for discussion. The discussion, however, soon dies down as either nuisance naturally disappears, but it becomes once more active at the next serious snowfall or at the next prevalence of fog, as the case may be. It cannot be said that in regard either to fog or snowfall, in spite of all discussion, the metropolis is one jot nearer a better state of things; but we hope that the matter will not be allowed to drop, now that the thaw which set in on Wednesday has relieved our municipal authorities in London from immediate anxiety. We desire to have the questions threshed out in times of meteorological peace, so that our resistant forces may be ready when the heavens again declare war. The conditions favourable to the production of fog are, we fear, well-nigh impossible to avoid, but it seems odd that no really satisfactory way has been found for the disposal of snow in the streets. The removal of snow by cartage is at its best a slow and clumsy process, while its disposal by liquefaction, as by the addition of salt, is highly objectionable unless certain precautions be taken, although the method may be expeditious and economical. As is very generally known, it is now the duty of the sanitary authority to clean our streets and to remove refuse, the expression "street refuse" being taken to mean dust, dirt, rubbish, mud, road scrapings, ice, snow, and filth, according to the Public Health (London) Act, 1891. Formerly, each individual occupier of premises was required to keep the pavement exactly in front of his premises clean. This, however, did not refer to the roadway. Now this duty devolves upon the sanitary authority who should see that the streets are properly swept and cleansed "so far as is reasonably practicable." This rule is still in force in spite of representations that have been repeatedly made that the old rule which entailed this duty on the householder should be reverted to. In March last year a householder attempted to bring proceedings against a sanitary authority for non-compliance with this provision of the Public Health Act, but the action failed because it was tendered in the evidence on behalf of the sanitary authority that all that was "reasonably practicable" had been done. It seems to us that the words "reasonably practicable" form a sort of unlimited excuse, and thus militate against the work of the removal of snow being done with that efficiency which in the interests of comfort and health is demanded. The condition of our streets after a fall of snow is invariably a reproach to our sanitary administration. We are well aware that the expeditious disposal of snow is not an easy matter unless steps are taken to have at hand an enormous staff of labourers to shovel and sweep the accumulated snow from the streets. This, however, is not only a source of very great expense, but it is not always practicable to suddenly enlist the services of a temporary staff of scavengers for this purpose. Besides which the fall of snow may continue for a long time. Hence salting the snow has been adopted chiefly on account of the ease and rapidity of the process. The result is a chilling slush which remains to be splashed in all directions and to make every pedestrian uncomfortable. Slush at a temperature near to zero is bad alike for horse and pedestrian. Only one point appears in favour of this method, and that is that it enables the horse to gain a footing. There is some force undoubtedly in this, for it is a cruel spectacle to see horses struggling for a foothold on snow hardened by traffic or by frost. The "salting" method would seem more satisfactory if the cold, fluid, freezing mixture could be at once swept away, but as a rule the slush is left to ooze away and its ultimate dissolution is a slow process. The authorities appear to prohibit the direct discharge of this mixture into the sewers, for what reason we cannot precisely see. Surely melted snow is no worse to deal with than the fluid which carries with it the refuse of the streets, while the presence of salt in the sewers can hardly be an objection. In these days of motor-cars and steam vehicles in our streets we are surprised that no attention has been turned to constructing a steam scoop, so to speak, fitted with a receptacle for the scooped-up snow. Mud is removed from the streets by means of large revolving brushes and we do not see why a similar arrangement could not be adopted for the removal of freshly fallen snow. It may be that the fact that the removal of snow is after all only rarely required does not make it worth while to construct a machine of this kind. But the inconveniences to traffic, besides the ill-health and excessive discomfort occasioned to pedestrians, demand a more rational means of removing the snow than appears to be at present available. We do not doubt that engineers, if they would only give a little attention to the matter and were stimulated by the promise of an award, would quickly solve the problem and thus protect the health and earn the gratitude of thousands. The question arises every year and it is a disgrace to the metropolis that it has not so far been satisfactorily solved.

CREASOTE POISONING.

CREASOTE poisoning is very uncommon. In the *Intercolonial Medical Journal of Australasia* of Oct. 20th, 1900, Mr. Herbert M. Hewlett relates the following case of creasote poisoning in a child. A girl, aged three and a half years, swallowed about two drachms of creasote. Immediately she complained of abdominal pain and was given a tablespoonful of olive oil. She rapidly became unconscious. About 20 minutes afterwards, when she was seen by Mr. Hewlett, she was insensible, with pale face, cyanosed lips, shallow respiration, and imperceptible pulse. The eyes were fixed, the pupils were contracted and immobile, the extremities were cold, and the muscles were flaccid. The stomach was washed out with about two quarts of warm water. A small quantity of food was present and the washings smelt strongly of creasote. The stomach was next washed out with two pints of a strong solution of magnesium sulphate and about six ounces were left in the viscus. Strychnine, $\frac{1}{75}$th of a grain, was injected hypodermically and she was put in blankets and surrounded by hot blankets. An enema of Liebig's extract and brandy was also given. About eight minutes after emptying the stomach the colour of the lips improved and the pulse became perceptible. Ten minutes later the colour was good

and the respiration was full and regular. The pupils were still contracted but reacted to light and the extremities were warm. In a couple of hours she drank white of egg and milk but complained of pain over the stomach, which was relieved by hot fomentations. Urine passed many hours after taking the drug was dark brownish. The first motion was also dark and smelt strongly of creasote. A second sample of urine was of a watery green colour. No after-effects followed and in a couple of days the child was running about again. Creasote closely resembles carbolic acid in its action but is a weaker caustic and does not produce convulsions.

PRIMARY OVARIAN GESTATION.

IN the Annus Medicus for 1900 reference is made to Mdlle. van Tussenbroek's case of primary ovarian gestation. It is stated that Mr. Bland-Sutton was inclined to regard her specimen as a doubtful one of this condition. In fairness to Mdlle. van Tussenbroek it should be pointed out that at the last meeting of the Obstetrical Society of London, on Jan. 2nd, Mr. Bland-Sutton said that he had had an opportunity of examining the specimen itself and microscopical sections of it. Two of these sections he was able to exhibit at the meeting. An examination of them left no doubt as to the existence of chorionic villi, and he was therefore convinced that this form of ectopic gestation was possible. Those who had an opportunity of looking at the sections agreed with Mr. Bland-Sutton's views.

DEPILATION BY HIGH-TENSION ELECTRIC CURRENTS.

AT a recent meeting of the Vienna Society of Physicians Dr. Schiff and Dr. Freund reported an interesting action of high-tension currents on the skin. According to the authors, when the hairy skin is exposed for 20 minutes to the silent discharge of the negative pole of a powerful Ruhmkorff coil, such as is used for the production of the Roentgen rays, the hairs commence to fall out, the hair-bulbs become atrophied after the third exposure, and some days later the portion of the skin which had been exposed becomes perfectly bald. The hair follicles become red and inflamed after the first two exposures. These observations seem to prove that depilation can be produced by the action of high-tension currents and that the depilatory effect of exposure to the Roentgen rays may be accounted for in this way.

MYASTHENIA GRAVIS OR ASTHENIC BULBAR PARALYSIS.

DR. PAUL of Boston, in the *Boston Medical and Surgical Journal* of Dec. 20th, 1900, adds another case to the list of about 70 cases of this obscure disease[1] now known to literature. The case is that of a married woman, 23 years of age. One maternal uncle was insane, and there was a neurotic tendency in the father's family. Eight months previously while performing at private theatricals, she suddenly felt weak and unable to rise from the stooping position without assistance. Eventually such acts as ascending stairs or boarding a tramcar became impossible to her unaided. Transient weakness in the arms followed, and there was difficulty in buttoning her dress or in doing embroidery and the like. Transient attacks of diplopia also occurred. On one occasion she fell while carrying her baby upstairs and slid down several steps, without, however, injuring herself. There was lack of expression in the face, and the voice was at times nasal and somewhat indistinct. Swallowing was sometimes awkward, and the neck muscles sometimes suddenly gave way so that the head required support. Mastication was not affected. On three different occasions she fell helpless on the floor, unable to move or speak, and had to be assisted up. Appetite and digestion were good, but she sometimes could not swallow and suffered from choking and cyanosis. Emotional excitement rendered her worse. The sphincters were not affected. The bulbar symptoms increased in severity and death occurred 18 months after the first symptoms. The necropsy, made by Dr. G. Magrath, revealed macroscopically nothing. The diagnosis was "myasthenia gravis," also called asthenic bulbar paralysis or Erb-Goldflam's symptom-complex. In the cases recorded there is a mortality of over 33 per cent. No explanation is offered of the etiology or pathology of the affection, though some writers have suggested that an unknown toxin of microbial origin plays the chief part, and that it acts by partially paralysing the motor-cells of the bulbo-spinal centres.

[1] "Asthenic Bulbar Paralysis," THE LANCET, Oct. 21st, 1899, p. 1110.

PRACTICAL HYGIENE FOR FEMALE TEACHERS.

UNDER the Board of Education Act, 1899, a series of lectures will be given at Bedford College, York-place, Baker-street, W., and at the Sanitary Institute, 72, Margaret-street, W., beginning on Saturday, Jan. 19th. The course will consist of 30 lectures, given on Saturday mornings throughout 1901. It will include practical demonstrations, and visits to schools and places where the application of hygiene in practice may be seen. The various subjects—sanitation of schools, physiology for teachers, psychological attitude of the mind towards the study of childhood, will be dealt with by well-known authorities and will be illustrated by experiments, diagrams, drawings, models, and lantern slides. Opportunities will be given to students to obtain practical acquaintance with the various subjects dealt with in the laboratories of Bedford College and for practical demonstration of sanitary appliances in the Parkes Museum. The course is open to women students over 19 years of age who hold either a teacher's diploma or certificate or have had at least two years' experience in teaching in a secondary school, or who can produce satisfactory evidence that they will be able to benefit by the instruction afforded them. Among the names of the lecturers are Dr. J. S. Edkins, Dr. H. R. Kenwood, and Mr. W. C. C. Pakes.

THE HYGIENIC TREATMENT OF PULMONARY TUBERCULOSIS.

IN the letter from our Paris correspondent which appears in another column the report is given of a committee which was appointed to formulate the conditions of admission to the sanatorium of Angicourt, an institution for the hygienic or "open-air" treatment of pulmonary tuberculosis. The committee suggest that the sanatorium shall be open to indigent inhabitants of Paris afflicted with pulmonary tuberculosis but whose lesions "are presumably curable." To assist in the selection of suitable cases it is further proposed that no patient shall be admitted to the sanatorium without his furnishing a certificate drawn up by his medical attendant showing clearly his family and personal history, the history of his illness, and a complete daily clinical record extending over at least eight consecutive days, setting out details of his pulmonary lesions, his rectal temperatures, his pulse, an analysis of his urine, his weight, and the result of a microscopical examination of his sputa. Thirdly, it is recommended that these certificates shall be examined periodically by a medical committee appointed for that end by the Hospitals Medical Society. These proposals are certainly to be commended and might well be adopted by similar institutions in this country—if the various provisions could be carried out. We quite agree with our correspondent, however, as to the numerous difficulties which would arise in this

respect. Physicians who have had experience in out-patient work know how difficult it often is to make out satisfactorily certificates for admission to convalescent homes; still harder would it be to give a precise account of a patient suffering from pulmonary tuberculosis—in fact, in many cases it would be practically impossible to answer the questions suggested by the Paris committee. One way of overcoming the difficulty would be to accept a less complete account of a case drawn up by a medical man, and if from this the case is presumably a suitable one for this form of treatment the patient might be admitted into the institution for a period of probation with the distinct understanding that if the expectation of the case doing well should not be realised he or she would be discharged. We think that such a plan would be more satisfactory than the one suggested by our correspondent, but the whole question is one to which an answer is not easily found.

THE AUXILIARY NURSES' SOCIETY.

THE numerous nursing societies in existence in London are apparently still insufficient to meet all the demands which are made upon them by the profession and by the public. As a rule, there is no difficulty in obtaining a well-trained nurse when the nature of the case requires more skilled aid than can be afforded by the patients' friends, but considerable difficulty is frequently experienced by medical men in obtaining permanent nurses for prolonged and chronic cases, and to supply this want is one of the main objects of a new society which has just started work under the title of "The Auxiliary Nurses' Society." The nurses are all members of the Royal British Nurses' Association, and in addition to their hospital work they have had some years' experience in private nursing. The society aims also at meeting the need for a body of nurses who are qualified by their age and experience to undertake cases in which either on account of the nature of the malady or of the circumstances of the patient it is undesirable to employ the services of younger women. The office of the society is at 10, Orchard-street, Portman-square. We appreciate the objects with which the association has been founded, and think that medical practitioners may be glad to take advantage of the class of nurse enrolled under its membership.

THE Central London Railway Company have met amicably a committee representing the owners of houses in the vicinity thereof, and as a result the Board of Trade, upon the joint invitation of persons representing both interests, have appointed a committee consisting of Lord Rayleigh, F.R.S., chairman, Sir John Wolfe-Barry, K.C.B., F.R.S., and Professor Ewing, F.R.S., to consider to what extent the working of the traffic on the Central London Railway produces vibration in the adjacent buildings. The committee will also consider what alterations in the conditions of working or in structure can be devised to remedy vibration, and will report on the matter to the Board of Trade.

DR. JOHN C. THRESH, county medical officer of health of Essex, reports that diphtheria is excessively prevalent in the county, especially in the rural districts. The epidemic decreases in one district and increases in others and apparently is traversing the whole county.

THE annual general meeting and election of officers of the Harveian Society will take place at the Stafford Rooms, W., on Thursday, Jan. 17th, at 8 P.M., and will be followed by a conversazione, at which there will be an exhibition of objects of interest from South Africa.

THE Lord Mayor has received about £22,000 in all in response to the Princess of Wales's appeal on behalf of the Soldiers' and Sailors' Families' Association. The sums sent direct to Colonel Gildea bid fair also to make a handsome total.

A TELEGRAM has been received by the Colonial Office, dated Jan. 4th, 1901, from the Government of Mauritius stating that during the week ending Jan. 3rd there were 32 fresh cases of bubonic plague, 23 of which were fatal.

AT the next meeting of the Royal Microscopical Society, to be held at 20, Hanover-square, W., on Wednesday, Jan. 16th, at 8 o'clock, the President, Mr. William Carruthers, will deliver his annual address.

REFLECTIONS ON THERAPEUTICS.

BY HARRY CAMPBELL, M.D., B.S., F.R.C.P. LOND.,
PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL AND TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.

II.[1]

INSTINCT AND REASON IN RELATION TO TREATMENT.

I HAVE hitherto considered the vis medicatrix as carrying on a purely organic process quite independently of the consciousness of the individual, but we cannot altogether exclude consciousness from among the inherent forces which make for the health of the organism. The conscious individual himself to some extent controls his own destiny; what he shall or shall not eat and drink, what clothes he shall wear, what pursuits he shall follow or avoid—these and many other things of a like nature are yet within the choice of all but the very poorest or most unfortunate, however cribbed, cabined, and confined he may feel his lot; and the question arises how far this mental factor of a volition acting on the initiative of experience operates in the direction of preventing or inducing disease, or of ameliorating or aggravating it when already set up.

The lower animals are guided in matters pertaining to their health chiefly by instinct, which is to them an all but infallible guide. But instinct is only capable of acting as guide to an organism in a comparatively simple environment, and one moreover which has been much the same for many generations past. Given such an environment, and an unerring instinct will in process of time evolve by natural selection. The animal will come instinctively to search after the food that is wholesome, to avoid that which is injurious, and to protect itself against harmful agencies of all kinds; and this instinct will be constantly supplemented by the individual experience, or rather by "reason," if we take that term, as we are entitled to take it, to embrace all mental guidance which is not instinctive, even though it may not rise to the level of a conscious intellectual process. As a matter of fact, animals are helped much more by experience than by reason, as reason is generally understood. If, therefore, there are introduced into the environment factors totally unlike any belonging to the ancestral environment, instinct, hitherto all-sufficing, becomes in respect of these new factors a wholly inadequate guide, and it takes long before, by a weeding out of the unfit, instinctive adaptation again occurs. The moth has not yet evolved the instinct to avoid the dazzling lure of the flame, but if countless successive generations continue to be exposed to the danger of it such an instinct will doubtless in the end evolve, by the survival of those for which the fatal attraction has the least force. Hence it happens that when we domesticate a wild animal we find instinct fail it in many particulars. If offered food of which its ancestors had no experience it has to learn by its own experience to distinguish the wholesome from the noxious. On the other hand, it is remarkable how persistent a primitive instinct may be in animals which have long been domesticated, and in which it has not been called out for many generations. Witness the terror excited in the horse by the smell of the wild carnivora

[1] No. 1 was published in THE LANCET of Jan. 5th, 1901, p. 51.

—a horse passing a menagerie will quiver with panic. The very existence of its wild ancestors depended upon their ability to hold their own against the carnivora. No match for these latter animals in strength their safety lay in their swiftness and their wariness to elude pursuit, and in the latter they were greatly aided by the sense of smell which when acute enabled them to scent their foes from afar; hence this sense became, and it still remains, highly specialised in them.

I say we cannot expect instinct to be a trustworthy guide unless the environment is a simple one and has been stable for several successive generations. It is clear that neither of these conditions obtains in the case of man, especially civilised man. His environment is infinitely more complex than was that of his primitive ancestors, and it has moreover varied, and continues to vary, very considerably from generation to generation—it has become, i.e., unstable and *pari passu* with, and as an inevitable result of, this increase in the complexity and instability of the environment, instinct has become less and less adequate as a guide, and reason more and more essential. Hence with the evolution of reason there has been a concomitant dissolution of instinct, until when we arrive at civilised man we find the one guide all but superseded by the other.

Now this places man at a disadvantage as compared with the brutes, since the guidance of reason is not by any means so trustworthy as that of the instinct which it has replaced. It is needless here to enter into a psychological exposition of the defects of reason as a guide for man.[1] To do this with any sort of fulness and completeness would be to write a book on human error. But what does concern us, and that most intimately, is that under the working of this new arrangement, as we may call it, man is continually going wrong in matters physiological, and it is most difficult to set him right. Do not we physicians see him persistently sinning against the laws of health, and that with a temerity that would be utterly amazing did we not know that beneath the temerity there lies a still more astonishing ignorance of all the laws of his being. It is often a task of much difficulty to enforce the most elementary principles of hygiene even among the educated classes; among the uneducated it is well nigh impossible. Soldiers on campaign prefer the risk of contracting typhoid fever to the trouble of boiling their drinking-water, and in India the enforcement of sanitary precautions against such terrible pests as cholera and the plague is not only stubbornly resisted, but leads not infrequently, especially if it runs counter to racial and religious prejudices, to riot and bloodshed. We have had instances of this in Calcutta, in Poona, and in Cawnpore only just recently, and it was but a few weeks ago that the newspapers had to record the acknowledged failure of the Indian Government to enforce the plague regulations, and its consequent resolve to give up the attempt to stamp it out by coercion. "It is hopeless," so runs the report of the official committee appointed to collect evidence, "to carry out effectively any system of plague administration which runs counter to the feelings, susceptibilities, and prejudices of the people." But what a comment is such a statement as this on reason as a guide instead of instinct. Nothing, however, so strikingly shows its inadequacy as the flagrant errors into which it allows mothers to run in regard to the up-bringing of their offspring, and in one particular—the *feeding* of children—I shall seek in its proper place to show that even the specialist physician with all his knowledge has still much to learn.

Instinct fails civilised man in respect both of food and exercise, and, as regards the former both in respect to its quality and its quantity. Sir William Roberts has said that a man's palate constitutes his dietetic conscience, and doubtless the palate is a useful guide, as it is also certainly the one most acceptable to the "natural man." But it is with equal certainty by no means to be depended on as a wholly safe director. The food of civilised man is presented to him in such an appetising and so highly concentrated a form that he is led to eat not only much that is bad for him but also too large a quantity. The individual with a constitutionally clamant appetite is thus far defective as regards his instinct; he derives great pleasure from eating and this leads him almost certainly, his inward monitor failing him, to injure his health by eating too much, and the better his teeth and digestive organs the more likely is he to do this. A wise physician used to say to his gouty patients with strong, hard teeth: "You have good teeth: take care you do not dig your grave with them." Those with constitutionally small appetites, on the other hand, are better equipped in respect of food-instinct, and escape a great deal of trouble in consequence. Here I may refer in passing to the cravings of some people, especially pregnant women, for particular foods. These, though often morbid and hurtful if indulged in, may yet be physiological promptings.

Instinct also often fails to prompt man to take the normal amount of exercise. In the natural state animals are compelled by the struggle for existence to lead active lives, and apart from this they take exercise—especially the young ones—for the sheer pleasure of it; but, as we have seen, in the case of civilised man the struggle for existence does not necessarily entail much exercise, and if not prompted by instinct to take his proper share he suffers in consequence. If, then, man's mental guide fails him even in regard to the most elementary laws of health, how much more untrustworthy must it be as a guide to health-conduct in its more complex bearings.

THE MENTAL GUIDE IN DISEASE.

It being so clearly manifest that as concerns the avoidance of what is calculated to cause disease man's guide is imperfect, we have next to ask how far it may be trusted when he is already suffering from disease. How far do instinct and reason help the sufferer to get well? In answering the question we must bear in mind that in so far as they help at all they must be regarded as part of the vis medicatrix. It is in wild animals again that we find instinct operating most effectively in disease as well as in health. These lick their wounds and keep them exposed to the fresh air, thus anticipating the most recent advances of surgery in their efforts, nature-led, to render them aseptic; there is good reason also to believe that they seek out herbs for their medicinal virtues. We know that our domesticated dog eats grass, apparently for the purpose of inducing vomiting. A sick animal will creep into some dark corner, not only to hide from its foes, but for the rest and quiet so needful in grave disease; and doubtless instinct manifests itself among the lower animals when attacked by disease in many other ways unnoticed by us, ever acting, we may be sure, with that unerring wisdom which characterises all the measures of the great vis medicatrix.

One would expect that if instinct ever asserted itself in man, and asserted itself effectively, it would be in disease especially that it would do so; for disease dates back through untold generations—is, in fact, as old as life itself. And if the vis medicatrix, working on purely organic lines and independently of consciousness, can, as she does, combat disease by means so complex and so potent, we should certainly expect consciousness also, when it comes into play in even the lowly form of instinct, to be a not unimportant factor in the ultimate results. And let it be remembered in this connexion that disease in its fundamental nature is the same in man as it was in his anthropoid ancestors, or in those yet more remote and primitive species that reach back in unending line beyond these into the dim dawn of being. I therefore do not see the same reason for supposing that instinct so far as it determines man's conduct in disease should have atrophied in the same way as it has as a determiner of conduct generally. There is yet another argument that may be urged in support of this view. Disease is a process of dissolution; in it man unevolves—if I may use the clumsy expression,—slipping back to the condition of his more primitive ancestors in whom we find instinct in its most perfected and effective form. We should therefore expect him to display—and there can indeed be no doubt that he does display—curative instincts in disease. The malaise, for instance, which attends acute illnesses, and especially in their onset, secures the rest which is so sorely needed, and we can best realise the great healing value of such premonition by calling to mind those cases of typhoid fever in which, owing to its absence, the patient has not taken to his bed until the disease has got a fatal hold. Again, the loss of appetite and the thirst in fever assuredly serve a good end, and the same may be said of the malaise of megrim, compelling as it does rest of mind and body. The loathing of food felt during the attack further secures rest of the digestive organs and the good effect is enhanced[2] by the nausea and vomiting (which are almost of

[1] See on this subject, Campbell: "The Causation of Disease," p. 197.

[2] See further on this subject, Campbell: The Physiological Effect of Disease, St. Bartholomew's Hospital Reports, 1895, p. 169.

the nature of instincts) by which the flow of bile is stimulated and toxic substances are removed from the body. These instinctive promptings are therapeutically suggestive. Many people, I believe, would be greatly benefited by an occasional 24 hours' fast and copious emesis, though the treatment is of such a nature that few will submit to it. The exquisite pain felt in the arthritis of rheumatic fever is also of the nature of a curative instinct, fixing the joint as in a splint, and by the rest which it thereby secures to it placing it in the best position for recovery. If only the inflamed cardiac valves could be similarly rested who knows but that the endocarditis might clear up as completely as the arthritis? At all events, the valves would not be permanently damaged to the extent they actually are.

It would, of course, be unsafe to allow our patients always to follow their instinctive promptings—in the matter of diet in typhoid fever, let us say—but we shall do well, I think, to heed them more than we do. I could relate more than one instance of patients obeying their instincts in express contradiction to the orders of their medical attendants, and with the happiest results. I remember the case of a woman with acute mammary abscess being ordered not to put the child to the affected side; the result was that the breast got larger and larger, and in three days it had attained enormous dimensions, the pain becoming acute. Unable to bear it, she disobeyed the medical man (who had, indeed, forgotten to order the milk to be drawn off) and she obtained immediate relief. I can also recall the case of a man who was in bed for many weeks with urethral fever and steadily getting worse. He was always saying he should never be well so long as he stayed in bed, and one day he took the law into his own hands, got up, and walked about the street, and from that time forward he never, as he said, "looked back." I do not cite these cases as affording precedents, but in order to warn the physician against turning an altogether deaf ear to a patient's instinctive promptings and to impress upon him the desirability of being prepared to consider how far they may be indicative, and as a consequence, safely indulged. As a set-off against the cases just quoted in which instinct proved a safer guide than the physician, I may mention the case of a child, a very poor hospital patient, who, when asked a few hours before his death if he fancied anything, promptly replied that he would like some "cheese and treacle"—presumably the supremest luxuries which his poverty-stricken home had afforded. Here the prompting was scarcely physiological, but he was beyond the stage at which the indulgence could harm him, and in obedience to the principle of euthanasia he was allowed to gratify his desire.

THE EXPERIENCE OF THE INDIVIDUAL AS A HEALTH GUIDE.

While instinct is, as we said just now, a most faulty guide to man under his present conditions, very valuable guidance may be derived from his individual experience as to what is good or bad for him. Individuals differ so much in their idiosyncrasies that it is only in respect of broad general principles that the physician can give stereotyped advice which shall be applicable to all. Hence he is often compelled to fall back upon the patient's experience, since in respect of many things each individual is a law to himself. Some are made rheumatic or gouty by meat, others can eat large quantities with impunity; some need to take much exercise to keep well, others can keep quite well while leading a sedentary life; and so on. It is especially in regard to food and drink that personal experience is helpful, and it behoves every man to find out for himself what things do and what things do not suit him. This truth is embodied in the saying that "a man is either a fool or his own physician at 40." Applying this test I fear we must conclude with the sage of Chelsea that an immense number of men are fools. In the first place, people often take an astonishingly long time to find out that a certain thing is injurious to them, and secondly, even when they do make the discovery they often do not choose to act upon it. Incredible as it may seem, I have known a man fail to realise till considerably past 40 years of age the fact that he always felt ill the day after he had dined out and eaten and drunk with less than his usual abstemiousness. It was only by casting his mind back and carefully thinking over the matter that the truth was borne in upon him that for every digression from his usual habit he had to pay the penalty of a day's purgatory. Such extreme cases are probably rare, but it is certainly very common for persons to fail to realise adequately a quite obvious causal connexion between ill-health and acts of "physiological unrighteousness." I recently spent a day with one of the most brilliant and sanest writers of our time, one therefore who cannot be accused of want of intelligence, and during the whole of the time he was smoking, save only at table. As fast as he finished one cigar he lit another from it, and he told me that he had smoked in this way since he was 16 years of age (he is now past 60) except for one or two short periods of abstinence. It was quite clear to me that he was suffering from chronic nicotine poisoning, and I have little doubt that his recent work has suffered on this account. Yet he has never realised that the habit has harmed him; indeed, he argues that it must have done him good, because on one occasion when he left it off for a time the work which he then did was much below his standard; and no doubt the sudden abstinence, after long habituation, did interfere with his mentation, though I utterly dissent from the conclusion which he deduced.

But while it is wise and right that the individual should seek to find out by experience what is good and what bad for him, it is by no means desirable that he should go to extremes and allow the pursuit of health to become the religion of his life. This is despicable, and it moreover brings with it its own Nemesis, for it leads to a morbid alertness for unfavourable symptoms and a constant dread of disease and death.

HISTORY OF THE HOUSING QUESTION IN LONDON.

PART I.

UNDER THE METROPOLITAN BOARD OF WORKS.

THE London County Council have just issued a book that will be of great value and use to all who are interested in the question of the housing of the poor. Considering the extensive nature of the subject, it gives in a comparatively compact form a summary history of what has been attempted and of what has been done. The committee of the County Council on the Housing of the Working Classes instructed Mr. C. J. Stewart, the clerk of the Council, to arrange for the production of such a record. Under his supervision the work has now been prepared by Mr. W. J. Russell and Mr. M. H. Cox, LL.B. Lond., and consists of a volume of some 400 pages, to which many maps of insanitary areas, model dwellings, &c., are added.[1] In regard to administrative action this history cannot, of necessity, date further back than 1855, when the Metropolitan Board of Works came into existence; but in regard to legislative action the record commences with the Shaftesbury Act of 1851 which was the first enactment dealing with the housing question. We are reminded how in April, 1851, the great Lord Shaftesbury, then Lord Ashley, called the attention of the House of Commons to the disgraceful condition of the houses inhabited by the poorer classes, and related that in one of the wealthiest parishes of London—St. George's, Hanover-square—there were 929 families which had but one room for each family, and 408 families had only two rooms. What, then, must have been the condition of less favoured localities? Lord Shaftesbury's able advocacy led to the passing of the so-called Adoptive Act, which is the first law on our statute book dealing with the question (14 & 15 Vict., c. 34). By this Act the local authority could borrow money on mortgage and itself lease or build houses for the working classes. As may be surmised by its nickname, this, the first Labouring Classes Lodging Houses Act, was not obligatory and could only be enforced when the local authorities by a special vote and with a two-thirds majority had declared their wish to apply its provisions. Considering what the vestries were in those days it is not surprising that at first nothing was done. On the other hand, the Common Lodging Houses Act of 1851, together with its amendments bearing the date of 1853, proved one of the most effective and beneficent laws ever enacted on this question. The carrying out of this law was not intrusted to

[1] The Housing Question in London. Printed for the London County Council; published by Messrs. P. S. King and Son, Great Smith-street, Westminster, S.W.

supine and corrupt vestries, but to the Metropolitan Commissioner of Police; consequently, of all the dwellings likely to become unhealthy and overcrowded, none have been so constantly inspected and so well controlled as those that come under the denomination of registered common lodging houses. This experience alone would suffice to show that some authority with wider powers, greater ability, and responsibility than was generally to be found in the vestries is needed if any real reform is to be effectively carried out.

No other great town in England or in Europe presented such a sorry spectacle as did London. Possessing no central local government of its own, no municipality, the metropolis was divided up into innumerable petty district bodies whose functions overlapped and clashed with each other and who were better able to hinder than to forward any great progressive measure. It was to mitigate the evils of this chaos that the Metropolitan Board of Works was brought into existence in 1855 by the Metropolis Management Act (18 & 19 Vict., c. 120). The Metropolitan Board of Works was elected in the second degree; that is, not by the ratepayers but by the ratepayers' representatives or vestrymen. It replaced the old Commission of Sewers, and it did not possess at first any powers to deal with the housing problem. The incompetence of the smaller local bodies had to be further demonstrated before the central body was authorised to intervene. Thus the Nuisances Removal Act of 1855 and the Sanitary Act of 1866 sanctioned the imposition of regulations fixing the number of persons allowed to occupy such houses as had been brought under these Acts and to provide for their registration, inspection, cleansing, and lime-washing, but it depended upon the energy of the vestries or district boards as to whether this law should be applied to any of their insanitary areas. Needless to say that as the law was not obligatory it was not very largely applied. The Labouring Classes' Dwelling Houses Act of 1866 and 1867 extended the time for the repayment of money borrowed for building purposes to 40 years. This was followed by Torrens's Act of 1868, establishing that "the responsibility of maintaining his houses in proper condition falls upon the owner, and that if he fails in his duty the law is justified in stepping in and in compelling him to perform it." Further, the local authorities were now called upon to appoint medical officers of health in their respective districts who should visit and report upon any unhealthy houses, and the local authority was empowered to force the owners of such houses to put them in order. When this was not done the local authority might even proceed to pull down a notoriously unhealthy house. In time this power was extended and by the Labourers' Dwellings Improvement Act of 1875 it was made to apply to "whole areas, where the houses are so structurally defective as to be incapable of repair, and so ill-placed with reference to each other as to require, to bring them up to a proper sanitary standard, nothing short of demolition and reconstruction."

As important perhaps as the Act itself, commonly known as Cross's Act, 1875, is the fact that its application was no longer intrusted to the vestries but to the Metropolitan Board of Works which had just been created. By this new law the medical officer of health, two local justices of the peace, or 12 ratepayers had the right to make representations to the Metropolitan Board of Works concerning any insanitary area in their district. The Metropolitan Board of Works had then to investigate the matter and if the facts stated were confirmed to draw up a scheme dealing with such area. Provision was to be made for supplying in the same district dwellings for at least as many persons as would be deprived of their homes by pulling down the condemned houses. Owners who were not satisfied with the scheme had the right to appeal to the Secretary of State for the Home Department and the latter was obliged to investigate their claims. This left the door open for much disputation and delay, and then when an area had been cleared the Board was not itself to rebuild but could only impose certain conditions on those who at their own risk and peril undertook to rebuild. Of course, the more these conditions were made suitable to the needs of the case speculators and investors became less and less inclined to undertake the work. Then for the compulsory purchase of the property, if an amicable arrangement could not be concluded, an arbitrator had to be appointed by the Secretary of State, and where the amount of compensation claimed exceeded £500 there was a right of appeal from the arbitrator to a jury.

Within the first four years of the passing of Cross's Act the Metropolitan Board of Works took action in regard to 11 schemes, and soon found that this law facilitated the obtaining of excessive compensation and all manner of delays and unnecessary expenditure. Under such circumstances schemes for re-housing the poor could not be made to pay. The Board entered a formal protest against giving as heavy a compensation for dilapidated, neglected, and insanitary property as if it had been property kept in perfect repair and order. It suggested that the cost that would have to be incurred if the houses were rendered habitable should be deducted from the amount of compensation to be paid. If, however, the houses were so bad that they could not possibly be rendered habitable, then the compensation should be only equal to the value of the land and the materials on the ground. The Board also sought to be relieved from the obligation of re-housing the same class of people in the same locality. Nobody would buy the sites under these conditions at a sufficiently high price and the Board had been obliged to sell the area cleared under the Whitechapel and Limehouse scheme of 1876 to the trustees of the Peabody Fund at a price calculated on a 20 years' purchase of a rent of only 3*d*. per square foot. Powers, also, the Board claimed, should be given to stop alterations while negotiations were proceeding, as such alterations were often undertaken only with the view of obtaining higher compensation. These representations made by the Metropolitan Board of Works led to the passing of the second Cross's Act in 1879, which, however, only improved the situation in matters of detail, for the main difficulties remained. Further representations were therefore made in 1880. It was also found that Torrens's Act had not effected the improvements anticipated. The repairs made by the owners were often considered sufficient by the justices to whom the owners appealed, though in reality such was not the case. In fact, the question arises whether in these technical matters the ordinary justices are competent judges. But the matter was complicated by a contest that soon arose between the vestries and the Metropolitan Board of Works, both parties seeking to throw upon the other the cost of the necessary reforms. The vestries wanted the Board to act under Cross's Act, and the Board wanted the vestries to proceed under Torrens's Act. It is true that the second Torrens's Act, which bears the date of 1879, gave the Board the power to do what the vestries had neglected to accomplish and place the cost on the rates paid to the vestry, but the Board shrank from the complicated litigation that such action would occasion. Thus this important clause of the Act has never been enforced. There was also another defect in Torrens's Act. A house, if pulled down, had to be rebuilt on precisely the same site, so that the want of open space in front or behind remained the same as before and in many parts of London the grievance was not only the condition of the houses but the fact of their being too closely crowded together.

The Metropolitan Board of Works never had the ambition or desire to build any artisans' dwellings. Whenever it was suggested that some particularly unwholesome site should be cleared their first care was to ascertain if any artisans' dwellings company would be willing to purchase the land and to build upon it. At first, it is true, they inserted clauses in the agreement that the land should be used in perpetuity for artisans' dwellings, but subsequently this was limited to a number of years and finally to only 10 years. So that there are now in London a certain number of artisans' dwellings, built more than 10 years ago, which can be converted into offices or warehouses or used for any other purpose.

Under all these circumstances the progress was so slow that Parliament appointed a Select Committee in 1881 to investigate why the various Acts dealing with the housing question had been so difficult to apply, and as a consequence of this inquiry we had the Artisans' Dwelling Act of 1882. This new enactment gave to the Secretary of State for the Home Department the right to dispense with the necessity of providing dwellings for more than half of the persons displaced by an improvement scheme; it raised to £1000 the amount of compensation entitling appeal to a jury; it provided that a grievance affecting not more than 10 houses could be dealt with under Torrens's Act, and that buildings which stopped ventilation could also be purchased. Finally, it was stipulated that improvements effected after representations had been made of insanitary conditions should not be allowed to raise the amount of compensation claimed. Now that the re-housing stipulations had been relaxed by the Act of 1882

the Metropolitan Board of Works took immediate action. Its plan was to clear a portion of a condemned area and not to deal with the remainder till the first portion had been rebuilt. This, however, did not solve the difficulty of maintaining the remaining portions of such areas in a habitable condition. Then the Board, in purchasing, had to pay the market value of the land, and in selling it obtained—for instance, in the Whitecross-street scheme in St. Luke's—3*d*. per square foot for what it had bought at 1*s*. 2*d*. per square foot. Altogether, from 1875 to 1889 the Metropolitan Board of Works spent on its re-housing schemes £1,983,892 and only recovered £377,114. Thus the loss or net cost amounted to £1,606,778. This looks very like a subsidy of more than £1,500,000 paid by the ratepayers to the 5 per cent. philanthropists who benevolently consented to buy land which was worth 1*s*. 2*d*. per square foot at 3*d*. per square foot, so as to provide better dwellings, not for the extreme poor but for that more prosperous and steady class of artisans which was not, in those days at least, in such urgent need of help. Then, after all, the accommodation afforded was insufficient; for 29,151 persons were displaced—that is, forced to leave their insanitary houses, and the model dwellings built instead only accommodated 27,780 persons. Apart from these figures the Board, it is stated, left to its successor, the London County Council, a legacy of some 4000 persons for whom homes should be provided, but this was reduced to 2457 by the Secretary of State.

It is not surprising if, in the face of this disastrous aspect of the problem, it was found necessary to make further investigations and efforts. Hence the Royal Commission which, at the proposal of the Marquis of Salisbury, was appointed in 1884 with H.R.H. the Prince of Wales as chairman. Of course, this commission had to report that the law should be more strictly applied—that in spite of the improvements effected the overcrowding was becoming more serious every year. There were Torrens's Acts, which compelled the owner to keep his property in proper order, and there were Cross's Acts, which when this could not be done sanctioned wholesale expropriation, purchase, and reconstruction on insanitary areas. Then the report described at length the prevailing insanitary conditions, the insufficient water-supply, and the terrible overcrowding, and asserted that the overcrowding was mainly caused by abnormally high rents, arising from the competition among tenants to secure tenements. This was due to the necessity of living near the places where work was to be obtained and to the demolition of houses formerly inhabited by the poor, so as to carry out public improvements, build railway lines and stations, &c. The commissioners recommended that the vestries should increase their staffs by appointing a greater number of better qualified sanitary inspectors, so that lodging-houses might be more strictly controlled and cellar dwellings be abolished. The failure, the commissioners thought, was in administration rather than in legislation, but still they suggested various amendments to the existing laws. Greater facilities for borrowing money, they urged, should be given, and prisons should be removed to outlying districts and their sites used for artisans' dwellings. The compulsory purchase of land should be rendered more easy and less expensive. The railway companies were to be urged to organise workmen's trains and were to be compelled to provide for the re-housing of such of the poorer class of tenants as were disturbed by the building of railway lines and stations.

This report of the Royal Commission led up to the adoption of the Housing of the Working Classes Act of 1885. This Act gave power for the sale to the Board of the site of several prisons. In other respects it introduced no new principle and aimed only at facilitating the application of existing laws; for instance, it rendered the appeal of the owner of condemned property from the arbitrator to a jury somewhat more difficult, it extended the meaning of the words "lodging-houses" to separate houses or cottages for the labouring classes whether containing one or several tenements, and it somewhat facilitated the process of expropriation and purchase. This was the last Act passed to facilitate the endeavours of the Metropolitan Board of Works. The next law was the Local Government Act of 1888, which brought the County Council of London into existence. To sum up the history of the question of the housing of the working classes up to the time when the Metropolitan Board of Works ceased to exist it might be described by the sceptic as an effort to make an omelette without breaking eggs. As a matter of fact, of course, for what omelettes were made eggs had to be broken. The question arises whether the right person was made to pay for the eggs. Under the Metropolitan Board of Works the cost mainly fell on the ratepayers, and it may well be objected that the burden might be more justly imposed on those who were responsible for the degradation of the property condemned.

THE PREVALENCE OF MOSQUITOES AND MALARIA IN THE COLONY OF HONG-KONG.

THE following preliminary report by Dr. J. C. Thomson of the Medical Department of the Hong-Kong Civil Service has been issued in the form of a letter to Dr. J. Bell, acting principal civil medical officer in Hong-Kong, regarding a research into the relation of mosquitoes and malaria in Hong-Kong and the New Territory. After a few preliminary remarks Dr. Thomson says:—

There are two distinct species of anopheles abundant in the colony, differing in size, general appearance, and the markings on the wings. The smaller, which I believe to be anopheles costalis, is prevalent all over the colony and in the ravines to the south of Magazine Gap; the larger, anopheles sinensis, is the more common throughout the New Territory, on the islands, and at Stanley and Pokfulam. While the area of general prevalence is thus different it is not exclusively so, as I have myself caught anopheles sinensis in the centre of the city in a hotel not far from the clock tower, while anopheles costalis has been included in some of the consignments from the mainland.

I have differentiated at least eight distinct species of culex, but I prefer not to commit myself to the naming of them until my classification has been confirmed or amended by an expert entomologist. To secure this I have sent to the London School of Tropical Medicine 54 mounted specimens, consisting of 14 different species of mosquitoes, two species being anopheles, eight species at least being culex, and the remaining four species probably belonging to other genera of the mosquito family, though one or two of them may prove to be species of culex. All the above have unspotted wings, excepting the anopheles and a single species of culex, of which I have obtained only a single specimen. This I believe to be culex mimeticus, and it is manifestly very rare. A good general rule, therefore, in Hong-Kong, in addition to the differences of the head appendages and the characteristic attitude when at rest that distinguish anopheles from culex, is that a mosquito with spotted wings is probably one of the dangerous anopheles, and one whose wings are unspotted is a culex. I have privately submitted a few of the more prevalent types of both genera for His Excellency the Governor's inspection.

[Dr. Thomson then goes on to refer to the breeding-grounds of anopheles. This insect chiefly affects the natural water-courses, and the favourite locations of the larvæ are the little breaks in the rocky surface by the side of the stream where there is just enough current to prevent stagnation. As far as the city of Victoria is concerned the question of dealing with anopheles pools reduces itself to the "training" of the nullahs—namely, clearing away undergrowth and levelling the bed so that there is a smooth waterway down which the water can rush rapidly. Dr. Thomson continues:]

Concurrently with my inquiry into the prevalence of anopheles I have been investigating the prevalence of the malaria parasite in the colony. Its connexion with anopheles is now an accepted fact. The general mosquito-malaria theory has been proved to the hilt and has recently been brilliantly demonstrated to the public by Manson's double experiment, but the connexion of malaria with disturbance of soil, an important point in Hong-Kong, is by no means clear as yet. Grassi disposes of the subject by stating that it depends on the creation during digging operations of puddles of water in which anopheles breeds. This certainly does not hold for Hong-Kong. The whole of the broken earth surface may show no single puddle the sun drying the superficial layers as they are turned up, and yet it is a fact of experience that in certain parts of the colony earth cutting is invariably attended by an outbreak of fever. On the other hand, there is undoubtedly some

connexion with the presence of moisture in the soil. In certain localities—e.g., around MacDonell-road, where earth-cutting may go on to an unlimited extent with impunity—I find that the soil is comparatively dry, while in others—e.g., the West Point already referred to, where the slightest excavation inevitably produces fever in the neighbourhood—I find that the soil is more or less water-logged. I propose to give attention to this question, which is one very seriously affecting this colony.

There are three main types of malarial fever, associated with different and corresponding parasitic organisms, and all the three types of the parasite I have found prevalent in Hong-Kong—the benign tertian parasite, easily yielding to the action of quinine; the quartan parasite, readily brought under control by the same drug but difficult to eradicate; and the malignant parasite, variously described as æstivo-autumnal by Italian observers, tropical by Koch, pernicious, &c., less amenable to quinine, more severe in the resulting symptoms, and more apt to produce a fatal result or prolonged ill-health.

Of 50 cases in which, up to Oct. 31st, parasites were found and their form and type recorded three came from Kennedy Town, 18 from the west part of the city, 13 from the central parts of the city, six from the east part of the city, two from Happy Valley, and eight from outlying villages.

The most common type of the parasite in the cases which I have examined has been the malignant parasite, with abundant crescentic forms; but I do not consider that this gives the true proportion of the prevalence of the different parasites in the colony, since probably only the more serious cases of fever find their way into the hospital wards.

There has recently been a small epidemic of fever in the neighbourhood of the naval hospital and Morrison Hill-road. My first opportunity of personal observation in reference to it occurred on Oct. 27th, when I was requested to see the family of an European Government officer whose four children had all suddenly become ill with high fever. I took a microscope to the house and found the benign tertian parasite in the fresh blood of three out of the four cases. All readily yielded to quinine, and by Nov. 1st they were back at school. I requested the father of the patients to catch for me some of the mosquitoes frequenting the house, and the first he submitted was a specimen of anopheles costalis.

While pursuing this investigation into the prevalence of mosquitoes in the colony and its dependencies, chiefly with reference to the question of the presence of anopheles and the means to be adopted for its extermination, my attention has been directed most forcibly to the enormous prevalence of mosquitoes of the genus culex. As has been mentioned, I have differentiated at least eight species of this genus. The culex mosquito does not, so far as is yet ascertained, act as a host to the malaria parasite; but it, as well as anopheles, is certainly the intermediate host of the minute parasitic blood-worm, the filaria nocturna or filaria sanguinis hominis, whose adult form lies in the lymph vessels and is the cause of the great group of elephantoid diseases. Elephantiasis is quite common among the Chinese in this region, though, for some reason not yet sufficiently explained, Europeans are as a rule exempt from it, an exemption, however, by no means complete; but most Europeans are affected by the immediate disagreeable effects of the bite of the mosquito, and few are aware that the daily supply of these vicious little insects is being produced in their own houses.

I think public attention should be drawn to this fact. I would like to write it in large capitals that I have found the larvæ of culex in process of development in abundance in or about every house without an exception in which I have looked for them. A few instances will illustrate the great variety, and also the common general character, of their breeding-places: at the Alice Memorial Hospital I found them in an old teapot on the roof-balcony; at the Tung Wah Hospital, in the ornamental flower-stands; at the gaol, in an empty pot in the coal store; at Kennedy Town Hospital, in the fire buckets; behind a house at the Peak, in a disused hand-basin; in another house at the Peak, in a dish placed to catch the water-drippings from the ice-chest, &c. In all these cases they were in abundance and were daily giving off large numbers of full-grown mosquitoes for the supply of their respective localities.

The crusade against the mosquito should include the culex as well as the anopheles. Anopheles must be dealt with by the Government chiefly, though owners of property may probably find it to their advantage to move privately in this matter as well; but culex can be exterminated, or at least greatly diminished in numbers, by individual action alone. It may be impracticable to secure individual action of a sufficiently widespread character to make much impression on the sum total of the culex mosquitoes in South China, but every householder in Hong-Kong has it in his power, by due attention to his verandahs, back-yard, and coolie quarters, to secure that in his own house at least there shall be fewer mosquitoes in the future than there have been in the past. Many are aware that what they have often seen in such receptacles as I have described are the larvæ of mosquitoes; but few realise that these same wriggling creatures will a few days later rise from the surface of the water as adult insects and will probably find their first meal of blood within the house that harboured them in the larval stage.

Since the foregoing was written a fact of very great practical importance has been brought to my notice by Mr. W. J. Tutcher. The anopheles occasionally departs from its usual habits and may breed in artificial collections of water. With Mr. Tutcher I examined one of the Chinese flower nurseries at West Point, that to the east of the house called "Nullah Side," from its location, and found in many flower-pots containing water the larvæ of anopheles and culex side by side. This observation does not affect the practical deductions I have already drawn regarding the usual breeding-grounds of the anopheles; but though I think it will be found that what I have above noted only occurs in the immediate vicinity of anopheles-containing ravines, it greatly intensifies what I have said as to the desirability of everyone doing his best to prevent vessels containing water from standing about yards or verandahs without being frequently completely emptied.

With reference to these Chinese gardens at West Point I would recommend that the Sanitary Board should be requested to cause an officer to periodically inspect them, and treat as a nuisance any vessel containing visible larvæ. Before making this recommendation I have received the assurance of Mr. Tutcher that the vessels containing the larvæ were not in a stagnant condition for any reason connected with the flower-producing industry, and could equally well be kept fresh; and in a neighbouring garden which I visited this morning in pursuance of my inquiries I found as many vessels containing water but hardly any containing larvæ. The owner of the garden told me that he frequently empties all dishes on account of what he called the water-mosquitoes. It would therefore be no hardship to insist on these nurserymen keeping their gardens in a condition better calculated to promote the public health.

In conclusion, I ask permission to quote a passage bearing on what I so urgently insist upon from a speech delivered so recently as Oct. 3rd at the London School of Tropical Medicine by Sir William MacGregor, K.C.M.G., C.B., M.D., &c. He says:—

"We have also to face the immense fecundity of the mosquito. Ficalbi says one mother mosquito may in the fifth generation be the progenitor of 20 milliards. Howard shows that one rain barrel may contain 19,110 larvæ, and that they may produce at least 12 generations in one summer. This at 70 eggs a mosquito would produce in a summer a number of mosquitoes expressed by 25 figures."

THE ROYAL INFIRMARY, PRESTON.—As a memorial of his son, Mr. Herbert Davies, M.B., Victoria University, who died in South Africa, Alderman Davies of Lancaster has announced his intention of giving £2000 to this infirmary.

PROPOSED PUBLIC HEALTH LABORATORY FOR DEVON AND CORNWALL.—The Sanitary Committee of the Plymouth Town Council has appointed a "Public Health Laboratory Sub-committee" on the advice of the chairman, Mr. W. Paul Swain, F.R.C.S. Eng., and the medical officer of health, Mr. F. M. Williams, "to promote the provision of pathological facilities for the examination of infectious disease in the poorer classes and to obtain the coöperation of the county councils of Devon and Cornwall." As the "sanitary conscience" of the West of England is not yet awake to the need of a county sanitary staff (medical officer of health, bacteriologist, &c.) to apply concerted and expert action to the prevention of disease, the scheme for a laboratory is warmly to be commended. It expresses the opinion of Plymouth, which, with its large population, is the most weighty in the two counties.

Obituary.

JOHN BAPTISTE POTTER, M.D. EDIN., F.R.C.P. LOND., M.R.C.S. ENG.

WE announced last week the death of Dr. J. B. Potter, obstetric physician to the Westminster Hospital, and are certain that a large circle of friends and contemporaries heard the news with deep regret and probably with some surprise. Born in 1839 Dr. Potter was barely 61 years old, an age at which many medical men and most consultants are in full work. But for five years at least his health had been failing, and latterly the declining process had gone on more rapidly. He had the objection, occasionally seen in medical men, to take advice—he would not put himself into the position of a patient. Shortly before his death several professional friends and colleagues, especially Dr. Allchin and Mr. Macnamara, did all that medicine or surgery could do to mitigate suffering and to preserve life, but their care proved unavailing, for Dr. Potter's exact condition only became known to them when nothing could be done. They were well seconded in their efforts by the nurses of the Westminster Hospital, which had been the chief field of his labours for 20 years, and where he died almost literally in harness.

JOHN BAPTISTE POTTER, M.D. EDIN., F.R.C.P. LOND., OBSTETRIC PHYSICIAN TO THE WESTMINSTER HOSPITAL.

Dr. Potter was born in London and was the son of Cipriani Potter, musical composer, and for many years principal of the Royal Academy of Music. He was educated at the Kensington Grammar School; his proclivities were mathematical, though he inherited enough musical faculty from his father to play fairly well and to enjoy good music whenever he could get it. He began his medical life with apprenticeship to Dr. Sloman of Farnham. He attributed many useful lessons, especially familiarity with drugs and their uses, to this experience and he was a great advocate of medical pupilage in some form. He entered University College Hospital in 1858 and became Member of the Royal College of Surgeons in 1862. Thereafter he proceeded to Edinburgh, where he graduated in 1863. Between this time and 1870, when his connexion with Westminster Hospital began, he was occupied in various ways. He held certain resident appointments in a Birmingham hospital, travelled with a patient for six months in Ireland, held some subordinate appointment in the Hospital for Children, Great Ormond-street, and in the year 1866 did temporary sanitary work in connexion with the outbreak of cholera in that year. In the year 1870 Dr. Potter was appointed assistant obstetric physician to the Westminster Hospital under the late Dr. Frederick Bird, who died in 1874, when he became full obstetric physician, as he continued to be to the time of his death. He was also lecturer on midwifery and diseases of women in the Westminster Hospital Medical School. He was an obstetrician rather than a gynæcologist and had a good consulting practice. Those who have had the benefit of consultation with him in the emergencies and difficulties of midwifery will remember with pleasure his clear head and his ready help.

Dr. Potter will be greatly missed in the medical societies, and especially in the Obstetrical Society of London, where he filled every office in a way to excite the respect of his colleagues and promote the prosperity of the society. He was on the council from 1872 to 1876 and again from 1890 to 1892, librarian from 1877 to 1878, vice-president from 1879 to 1881, and treasurer from 1882 to 1884 and again from 1893 to 1897. He was on the board of examiners for midwives from 1883 to 1884. He was president of the society in 1885 and 1886, and at the time of his death he was a trustee. In his inaugural address as president he laid stress on the importance of good general training for obstetric physicians and uttered a warning, not altogether unneeded, against excessive specialism. Such a history is sufficient to show the esteem in which he was held by his colleagues. Though he seldom obtruded his views on the society, whose Transactions contain but few communications from him, his administrative services were greatly appreciated. On the committee of the Society for the Widows and Orphans of Medical Men he was one of the most active and useful members and was at the time of his death both trustee and treasurer. Though a London man, nurtured at University College, he graduated at the University of Edinburgh and his services to the Edinburgh University Club, of which at the time of his death he was co-trustee with Sir Dyce Duckworth, will not be forgotten by his co-graduates. He was one of the earliest members and no dinner of the club seemed complete without his presence. Though for his position he was one of the silent members of the profession, it will be seen how many offices he filled and with what confidence and esteem he was regarded by his colleagues. We have before us a few words on his character from one who practised in the same walk of the medical profession as himself and whose praise would be regarded as of the highest value. In this estimate of Dr. Potter occur the following words: "He was an excellent fellow, high-toned and straight as a die and incapable of doing a wrong thing." And this is the opinion which Dr. Potter had earned for himself throughout the profession.

Since the year 1868 he had acted as physician to the Royal Society of Musicians. In religion, whilst liberal towards those who differed from him, he was a decided Churchman of the Broad Church school. For many years he was churchwarden to the late Rev. Harry Jones, with whom he was on terms of intimate friendship. Dr. Potter was fond of books, especially of topographical works, and was a great student of Old London. For another part of England he displayed quite a peculiar affection—namely, the West; but his favourite place was Lyme Regis, to which he resorted for his annual holiday for something like 26 years with only one exception.

Dr. Potter married in 1872 Celina, second daughter of Mr. Alfred Blyth of Westbourne-terrace, by whom he had three children—one son, Mr. John Wagner Potter, of the staff of the office of the Crown Agents for the Colonies, and two daughters.

PROFESSOR POTAIN.

THE medical profession of France has been of late sorely tried by the deaths of some of its most prominent members. Foremost among them stands the venerated name of Potain. The aged professor died quite suddenly on Jan. 5th at the age of 75 years. Scarcely six months ago he delivered his last lecture at the Charity Hospital amid an exhibition of enthusiasm and affection which has rarely been equalled and of which a touching description was given by our Paris

correspondent.[1] There, in the presence of the leaders of the French medical profession such as Bouchard, Dieulafoy, Guyon, Déjerine, Marey, Tessier, and many others, surrounded by present and former pupils, and supported by colleagues and friends, the venerable professor spoke for the last time in an official capacity. Very dramatic was the end. 11 o'clock struck, the master stopped and said simply: "Gentlemen, I have given my last lecture; I wish to say a word or two in memory of Corvisart who, 100 years ago, in this very theatre created the first course of clinical medicine in France. I wish to thank my colleagues, my pupils, my friends——." Here he broke off with his eyes full of tears. Those who knew him well feared that the profound change in his way of life which followed his retirement, owing to his having to give up his course of lectures and his daily visit to the hospital, a visit which he never failed for 30 years to make at eight o'clock in the morning, would have a disastrous effect upon the remainder of his life; and such was the case. He became melancholy and oppressed although his bodily health remained good. On Jan. 4th he complained of feeling tired, but paid a visit to Dr. Napias, the head of the Assistance Publique, who was suffering from influenza. He passed a quiet evening in company with Dr. Tessier, his old *chef de clinique*, and went to bed about 11 o'clock. At 2 A.M. on Saturday, Jan. 5th, his servant went into his room to make up the fire and found him dead and cold.

Outside his scientific attainments Professor Potain will be remembered as a typical example of a good and kindly man, one of a fashion now almost passed away, the *vir bonus, medendi peritus*, and as one who took the highest place in his class. A bachelor, with no relatives but one sister, he was, indeed, a father to his pupils. He "sustained" his thesis in 1853, the subject being the Abnormal Bruits which follow Hæmorrhage. Shortly afterwards he became *chef de clinique* to Bouillaud and was successively nominated as physician to the hospitals in 1859 and *professeur agrégé* at the Paris Faculty of Medicine. In 1860 he became physician to the Menages Infirmary, in 1865 physician to the St. Antoine Hospital, and in 1866 to the Necker Hospital. On March 20th, 1875, he was nominated professor of pathology at the Faculty of Medicine and shortly afterwards professor of clinical medicine. In fulfilment of the duties of the last post he lectured in the theatre of the Charity Hospital where Corvisart and Bouillaud had lectured before him, and on the day of his retirement his pupils presented him with the chair from which his two illustrious predecessors and himself had for so long held forth. He was a Member of the Academy of Medicine, a Member of the Academy of Sciences, and Commander of the Legion of Honour. He wrote much, and among his works may be mentioned his lectures on Clinical Medicine and his treatises on Diseases of the Heart, a work of world-wide renown. His funeral, which took place on Jan. 8th, was attended by an enormous crowd, but in accordance with his specially expressed wishes no funeral oration was pronounced over his remains.

JAMES HOUGH, F.R.C.S. ENG., J.P.

WE regret to announce the death of Mr. James Hough, of Grange-road, Cambridge, a venerable practitioner who had been resident in the town for nearly 60 years and occupied a very prominent position amongst its public men. His last illness was of short duration. About six weeks ago he attended the annual meeting of the Cambridge Female Refuge, of which he was the treasurer. Shortly afterwards he suffered from a carbuncle; symptoms of alarming prostration set in, and he passed away quietly on the morning of Dec. 28th, 1900.

Mr. Hough was born on Jan. 19th, 1818, at Palamcottah in India, where his father, the Rev. James Hough, was military chaplain. His mother was Elizabeth Pattinson, third daughter of Thomas and Mary Pattinson, of Kirklinton, Cumberland, and it was to their care that Mrs. Hough entrusted her boy when his parents returned to India after visiting England in 1823. Mr. Hough spent his younger days at Kirklinton and Houghton. His school days were passed at Christ's Hospital; he then studied medicine at Guy's and St. Thomas's Hospitals, and was admitted a member of the Royal College of Surgeons of England in 1841, at the age of 23 years. He became a Licentiate of the Society of Apothecaries in the same year and a Fellow of the Royal College of Surgeons of England in 1876. He commenced his long and appreciated connexion with Cambridge immediately upon becoming qualified, going there as assistant to Dr. Fawcett, with whom he shortly afterwards entered into partnership. This link continued until 1882, when Dr. Fawcett retired. Mr. Hough then took his eldest son, Mr. James Hayward Hough, into partnership and the practice was carried on by father and son until 1893, when the latter died. This bereavement was a great blow to Mr. Hough, and left its effects upon him. In January, 1894, Dr. E. Lloyd Jones joined the firm and remained in partnership with Mr. Hough until 1896 when Mr. Hough retired at the age of 80 years. To the men of the younger generation the deceased was a practitioner of the old school, an all-round man of a kind which the old methods of training were wont to beget. He was well known during the best years of his life as *the* accoucheur at Cambridge. For his practical skill he was no less distinguished than for a tender heartedness which was quite unique. More than half a century of active practice seemed to have lessened in no degree the warm-hearted sympathy with the sick which was one of his greatest characteristics. His emotion was oftimes but ill-concealed when he saw others suffering. His energy was phenomenal until the very last; to render assistance to the sick, rich or poor, to work for many philanthropic societies or for his political party—these were the ways in which his long and useful life was spent.

Mr. Hough had a very active public life. A strong and consistent Conservative, he was long the respected leader of his party at Cambridge. In 1886 occasion was sought to testify to the appreciation of these services felt by his Conservative friends, and on April 18th, at a large and enthusiastic meeting, he was presented with a "buggy," or hooded trap, which became as familiar in the streets of Cambridge as was his own figure. The presentation was made by the Rev. George Forrest Browne, now the Bishop of Bristol, in a most felicitous speech. Mr. Hough occupied the position of chairman of the consultative council and leader of the Conservative party in Cambridge from 1884 to 1899, during which time four contested elections were fought, the result being an "unbroken record" of success for Sir Robert Penrose FitzGerald, the Conservative champion. In October, 1899, he was presented with an illuminated copy of a resolution expressing the indebtedness of the party to him for his services.

Mr. Hough also found time for a considerable amount of Church work, for which his family associations gave him a special aptitude. His father, as has already been mentioned, was a clergyman of the Church of England, and one of his ancestors had been a bishop. Mr. James Hough was churchwarden of St. Benedict's Church from 1848 to 1893. During that period he successfully resisted an attempt to close the church and amalgamate the parish with another, and eventually had the satisfaction of seeing the ancient building beautifully restored. "The Architectural History of the University of Cambridge and of the Colleges of Cambridge and Eton" and a purse of £40 were presented to him by the parishioners and congregation upon his retirement. Mr. Hough had also assisted in the missionary and social work of the Church. He had been treasurer of the local auxiliary of the Church Missionary Society since 1858, and of the Cambridge Female Refuge, and held a like position in connexion with the Cambridge Book Hawking Society from 1857 until it was given up in 1890. He was president of the Cambridge branch of the Church of England Young Men's Society and of the Cottage Orphan Home for Little Girls, and was also warmly interested in the Church Defence Society and the Society for the Propagation of the Gospel. He was moreover chairman of the *Cambridge Express* Newspaper Company from its formation.

Mr. Hough married on July 8th, 1846, Eliza Sophia, daughter of Mr. W. W. Hayward of Cambridge, who died in June, 1893. His family consisted of four sons and four daughters, of whom three sons and two daughters are living. Mr. George Frederick Hough is vicar of Holy Trinity, Worcester, Mr. Charles Henry Hough is a surgeon at Derby, and Mr. William Woodcock Hough is in holy orders and was officiating as the missioner of the Corpus Christi College Mission in London until he resigned through ill-health. Mr. Hough's funeral took place at Mill-road Cemetery, Cambridge, on Jan. 2nd, 1901, and was a

[1] THE LANCET, July 14th, 1900, p. 138.

touching farewell to one whose whole life had been unselfishly devoted to the promotion of good works. The large attendance marked the respect in which the deceased was held, and the difference of classes and opinions represented pointed to the variety of the work in which he had been engaged.

SIR WILLIAM HICKS FARRINGTON, BART., M.D. ST. AND., M.R.C.S. ENG., L.S.A.

SIR WILLIAM HICKS FARRINGTON, who was the fifth baronet of his line, was the elder surviving son of the fourth baronet, Sir Henry Anthony Farrington, who died in 1888. Sir William Farrington, who was born in 1838, was educated at the King's School, Ottery St. Mary, and at St. Bartholomew's Hospital, where he held the offices of house surgeon and resident accoucheur. He became a Member of the Royal College of Surgeons of England in 1859 and a Licentiate of the Society of Apothecaries in 1860. Besides his hospital appointments he held those of resident medical officer to the London Fever Hospital and of assistant surgeon to H.M. Convict Prison at Gibraltar. He was afterwards in practice at Penshurst, Kent. He is succeeded in the title by his son Henry Anthony Farrington, who was born in 1871.

CHARLES HARWOOD, M.D., L.R.C.S. EDIN.

DR. CHARLES HARWOOD of Hemington, Leicestershire, died very suddenly on Jan. 3rd while engaged on professional business at some distance from his home. On Jan. 2nd he was apparently in good health and spirits, and on Jan. 3rd he drove to Melbourne, a small town in the adjoining county of Derby, where he was seized with illness while in the house of a member of the board of guardians and expired almost immediately. Dr. Harwood was the son of a medical practitioner in Derby and received his professional education in Edinburgh, where he took the degree of M.D. and the diploma of L.R.C.S. in 1850. At the time of his death he held the appointments of medical officer of health of the Shardlow, Stapleford, and Castle Donington rural district councils; he had also formerly been medical officer of health of the borough of Derby, surgeon to the Derby Dispensary, and surgeon-major to the Derbyshire Regiment. Dr. Harwood was well known and much respected in the Castle Donington district, where he had practised for many years. He has left a widow and family for whom much sympathy is felt.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Horace Tracy Hanks, Professor of Gynæcology in the Post-Graduate Medical School, New York.—Dr. R. J. Curtiss, formerly Professor of Bacteriology in the College of Physicians and Surgeons, Chicago.—Dr. Berne, Honorary Professor in the Medical Faculty of the University of Lyons.

THE WAR IN SOUTH AFRICA.

THE X RAYS IN SOUTH AFRICA.

BY JOHN HALL-EDWARDS, L.R.C.P. EDIN.
SURGEON RADIOGRAPHER TO THE GENERAL HOSPITAL, BIRMINGHAM, AND TO THE IMPERIAL YEOMANRY HOSPITAL, DEELFONTEIN, SOUTH AFRICA.

SOME time before leaving England and long before I had any idea that my services would be required in South Africa I advocated, through the medium of the medical press, a more extended application of the x rays to military surgery. Nine months' experience here has proved that they are much more useful than I even ventured to predict and that in their usefulness they stand only second in importance to aseptic surgery. As my suggestions and predictions then were based purely upon work carried on in civil practice, with but a very superficial knowledge of the actualities of war, I am doubly pleased to record that my hopes have been more than realised and that excellent surgery has been the outcome of the work done here.

Before being appointed on the staff of the Imperial Yeomanry Hospital I made repeated applications to the War Office, always with the same result—viz., a sheet of blue paper informing me that there was no call for x-ray experts in South Africa. On one occasion I had a personal interview with an official at the War Office who told me that for several reasons they could not send me out. In the first place, there was very little useful work to be done; in the second place, that there were already out many men capable of undertaking the work; and lastly, that they could not afford to send me out, however much they might wish to do so. At the same time, I was shown a cablegram from South Africa demanding the immediate presence of eight men with a sufficient knowledge of electricity and photography to enable them to help the experts (?) already sent out and to repair broken-down apparatus—or, in other words, to do the work for which someone else would get the credit. How the arrangement has worked I am not entirely in a position to say, but from what I have heard the results which were produced have not fulfilled the anticipations and expectations of some of the surgeons, and judging from the several cases sent to us where others have failed to find bullets (after the application of the x rays) I should imagine that the experiment has not altogether proved a success. An eminent consulting surgeon who visited our hospital amused me by asking if localisation in my hands had proved a success and I learned from him that in some of the base hospitals the surgeons had been greatly misled by it. On my informing him that a properly carried-out localisation was absolutely accurate and certain he expressed great surprise, proving that he had received some information to the contrary. Granting that the procedure of localisation has been properly carried out, if there is any mistake it is due to want of knowledge on the part of the x-ray operator, who must, if his deductions are to be of any value, have had considerable experience, combined with a knowledge of anatomy and surgery. The assistants sent out by the War Office have in most instances become masters, either from force of circumstances or from a lack of interest on the part of those whom they were sent to assist. I may mention that the experts (?) themselves had in many instances but a few days' training prior to their proceeding to the seat of war. And the work done by their (so-called) assistants may be, and in all probability is, good, but inasmuch as they can have had but a very limited experience, and as in most cases they have no knowledge of anatomy or surgery, the operative surgeons cannot accept any suggestion from them, hence failure results. As an example of the way in which an excellent radiograph and localisation may be misleading I would like to quote the following case which was brought to my notice at a large hospital at Pretoria. A patient having a bullet in his thigh was radiographed and its position was marked on the limb. The surgeon cut down upon the spot indicated but failed to find it; after a prolonged search it was eventually found two inches higher up the limb. It was subsequently found that the spot indicated upon the skin of the patient had been arrived at from measurements made upon the negative. As in every negative there is a small amount of distortion, and in some a very considerable amount, measurements made in this manner are always unreliable and grave consequences are almost certain to follow such an unscientific proceeding.

Notwithstanding the fact that the penetrative power of modern small-bore projectiles is such that at all ranges up to 1500 yards under ordinary circumstances they pass through the tissues without doing any considerable amount of harm, there is in a large war such as we are at present engaged in plenty of work for the surgeon radiographer. Out of the 200 cases which up to the present have come under my notice over 60 bullets or portions of bullets or shells have been found and accurately located. In 54 of these cases the foreign bodies have been removed and in no case has the surgeon failed to find what he looked for. In the remaining cases no operation has been performed, it being thought best—for a variety of reasons it is not necessary for me to mention here—at any rate for the present to leave them undisturbed. Of the remaining 140 cases most of them were examined for the purpose of ascertaining the amount of injury sustained by bone after the passage of a bullet through it, and in a few no foreign body was found, although its presence was suspected.

These figures plainly show that at any rate one of the assertions made by the authorities at home has no foundation in fact and that they formed erroneous opinions, founded on inexperience, as to the numerous accidents which tend to diminish the penetrative power of modern projectiles.

Whilst the capability of the x rays of discovering and accurately locating bullets was not for one moment questioned, the number of bullets which experience has shown are for one reason or another retained in the tissues was vastly under-estimated. At any range up to 1000 yards a Mauser or Lee-Metford bullet will pass through the densest bony structures of the human body, granting that a full charge of cordite has been used, that the bullet has been unimpeded in its flight, and that the cupro-nickel casing is complete. It occasionally happens, however, that a full charge of cordite has for some reason or another not been used. It is still more common for a bullet to strike some hard substance before finding its final billet, and I have good reasons for suspecting that most of those which I have localised come under this category. A ricochet bullet is by far the most dangerous to meet, and the Boers are so far aware of this fact that they prefer to fire low, at the ground, in front of our troops. A ricochet bullet is especially dangerous for three reasons. In the first place, even if it falls upon soft ground and is not deformed, its penetrative power is so greatly diminished that it is likely to be retained in the tissues if it finds a billet; secondly, if it strikes a hard substance it is so altered in shape that serious tearings of the tissues and splintering of bones are certain to accrue; and thirdly, without being greatly altered in shape it may have imparted to it an amount of spin which produces serious results. A spinning bullet is one of the most dangerous of missiles and the amount of damage it is capable of inflicting depends to a very great extent upon the rate of spin; this may be so slow that the entrance wound may present all the characteristics of an ordinary entrance wound, or it may be so fast as to produce a large irregular wound, such as one would expect to have been caused by a piece of shell. Considerable difference of opinion exists as to the possibility of an uninjured Lee-Metford or Mauser bullet being flattened against bone when fired directly into the tissues. From my experience I am of opinion that under such conditions no flattening of the bullet is possible, and that in all cases where a whole bullet is found to be deformed it has struck some substance harder than bone before entering the body.

Quite apart from the finding and localising of bullets, most excellent and useful work is to be done in radiographing all bullet and shell injuries to bone, and many useful observations will be made by the careful examination of the resulting pictures. Our knowledge of the amount and character of injury which under varying circumstances can be done by a bullet, is so small and incomplete that many new facts should come to light as the result of the work done during the present war, and had the x-ray work been as carefully carried out as its importance warrants one of the greatest advances ever made in military surgery would have been placed to our credit. That the x rays have not been given a fair chance I am in a position to prove. Some hospitals have been supplied with excellent apparatus but no one to work it, whilst in others there is no apparatus, and in a few, whilst having the apparatus, it is placed in such incompetent hands as to prove rather a source of danger than one of the most useful adjuncts. Many patients have been sent home with bullets still in their tissues which should have been removed, whilst others have suffered weeks of pain which should have been relieved in a few hours.

If the x rays are to prove of full use in future wars one of the first steps to be taken by our War Office must be the organisation of a complete x ray department, where the methods of procedure will be properly taught, experiments made, and apparatus designed and manufactured, with a full knowledge of the requirements of military surgery under all conditions and circumstances. The apparatus placed at my disposal is as complete and efficient as could be purchased. Nevertheless, it is by no means perfect, and had I been placed in less fortunate circumstances I should several times have been landed in difficulties. Experience has convinced me that much time and thought will have to be expended before our apparatus can even be said to be as perfect as our present knowledge will allow, and as the science is certain to progress there is a large field open to experiment. It would be greatly to the advantage of the Army Medical Department if experiments were carried out under their own control. The cost would be but a trifle compared with the great advantages which would be reaped not only to military but to civil surgery.

In future wars each base hospital must have its surgeon-radiographer, and in addition there must be a number of experts unattached who with portable apparatus can be sent anywhere and everywhere as circumstances may demand. Several lives and limbs would have been saved during the present war—for instance, at the relief of Mafeking—had an expert been within reasonable call. Inasmuch as radiography has been recognised as a legitimate branch of medicine none but qualified experts should be employed, and apart from this, and for reasons which I have already mentioned, this is absolutely necessary if the best results are to be sought after. Recent events at home have shown that the x rays in inexperienced hands are a source of great public danger, and it is to be hoped that steps will be taken to place it beyond the power of the novice to expose his friends or enemies to danger.

In this letter I have purposely refrained from entering into details of any of the many interesting cases which have passed through my hands; I hope, however, to publish some of these on my return home.

Deelfontein, South Africa.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 7329 births and 3964 deaths were registered during the week ending Jan. 5th. The annual rate of mortality in these towns, which had been 16·1 and 16·9 per 1000 in the two preceding weeks, further rose last week to 17·5. In London the rate was 17·8 per 1000, while it averaged 17·3 in the 32 large provincial towns. The lowest death-rates in these towns were 8·6 in Derby, 10·5 in Croyden, 11·2 in Norwich, and 12·0 in Portsmouth; the highest rates were 21·0 in Birkenhead, 21·4 in Sheffield, 21·5 in Manchester, and 22·5 in Liverpool. The 3964 deaths in the 33 towns last week included 323 which were referred to the principal zymotic diseases, against 351 and 334 in the two preceding weeks; of these 79 resulted from diphtheria, 71 from whooping-cough, 56 from measles, 47 from "fever" (principally enteric), 37 from diarrhœa, and 33 from scarlet fever. No death from any of these diseases occurred last week in Huddersfield; in the other towns they caused the lowest death-rates in Cardiff, Burnley, Hull, and Newcastle, and the highest rates in Wolverhampton, Salford, Blackburn, and Sheffield. The greatest mortality from measles occurred in Wolverhampton and in Blackburn; and from whooping-cough in Birkenhead and Sheffield. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 79 deaths from diphtheria included 24 in London, eight in West Ham, eight in Sheffield, seven in Leicester, and five in Bristol. No fatal case of small-pox was registered last week in any of the 33 towns, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday last, Jan. 5th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2390, against 2477 and 2535 on the two preceding Saturdays; 163 new cases were admitted during the week, against 255, 218, and 167 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 306 and 325 in the two preceding weeks, further rose last week to 330, but were 376 below the corrected average. The causes of 49, or 1·3 per cent., of the deaths in the 33 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Bradford, Leeds, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Preston, Hull, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·2 and 20·6 per 1000 in the two preceding weeks, declined again to 19·2 during the week ending Jan. 5th, but showed an excess of 1·7 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 14·4 in Paisley and 15·7 in Leith to 21·5 in Edinburgh and in Dundee and 22·4 in Greenock. The 602 deaths in these

towns included 29 which were referred to whooping-cough, 22 to diarrhœa, 15 to measles, three to small-pox, three to diphtheria, two to scarlet fever, and two to "fever." In all, 76 deaths resulted from these principal zymotic diseases, against 74 and 87 in the two preceding weeks. These 76 deaths were equal to an annual rate of 2·4 per 1000, which was 1·0 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 26 and 33 in the two preceding weeks, declined again last week to 29, of which 16 occurred in Glasgow, five in Greenock, four in Dundee, and three in Edinburgh. The deaths from diarrhœa, which had increased from 10 to 18 in the three preceding weeks, further rose to 22 last week, and included seven in Glasgow, seven in Dundee, and four in Aberdeen. The fatal cases of measles, which had been 12 in each of the two preceding weeks, increased last week to 15, of which 12 were registered in Edinburgh and two in Aberdeen. The three deaths from small-pox corresponded with the number in the preceding week, and were all recorded in Glasgow, where two of the three fatal cases of diphtheria and both of the deaths from "fever" were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 111 and 121 in the two preceding weeks, declined again last week to 105, and were 131 below the number in the corresponding period of last year. The causes of 38, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had declined from 27·4 to 21·5 in the four preceding weeks, rose again to 29·4 during the week ending Jan. 5th. During the past four weeks the death-rate in the city has averaged 25·6 per 1000, the rate during the same period being 16·7 in London and 18·5 in Edinburgh. The 197 deaths belonging to Dublin registered during the week under notice were 53 in excess of the number in the preceding week and included 23 which were referred to the principal zymotic diseases, against 16 and 12 in the two preceding weeks; of these, 13 resulted from whooping-cough, four from diphtheria, three from "fever," two from measles, and one from diarrhœa. These 23 deaths were equal to an annual rate of 3·4 per 1000, the zymotic death-rate during the same period being 1·2 in London and 3·2 in Edinburgh. The fatal cases of whooping-cough, which had been seven, six, and five in the three preceding weeks, increased last week to 13. The four deaths from diphtheria exceeded the number recorded in any week since February last. The fatal cases of "fever" which had been four in each of the two preceding weeks, declined to three last week. The 197 deaths in Dublin last week included 48 of children under one year of age and 47 of persons aged upwards of 60 years; the deaths of infants were largely in excess, while those of elderly persons corresponded with the number in the preceding week. Three inquest cases and three deaths from violence were registered, and 53, or more than one-fourth, of the deaths occurred in public institutions. The causes of 17, or nearly 9 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1900.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 8·0 per 1000 of the population, estimated at 4,589,129 persons in the middle of last year. In the three preceding months the rates had been 8·7, 10·7, and 10·0 per 1000 respectively. The rates were considerably below the average in St. George Hanover-square, Hampstead, Holborn, Clerkenwell, St. George-in-the-East, and Lee; while they showed the largest excess in Fulham, Stoke Newington, Shoreditch, Poplar, St. Saviour Southwark, and St. George Southwark sanitary areas. No case of small-pox was notified last month, and only one small-pox patient remained under treatment in the Metropolitan Asylums hospitals on Saturday, Dec. 29th. Scarlet fever was considerably less prevalent than it had been in any of the three preceding months; among the various sanitary areas this disease showed the greatest proportional prevalence in Fulham, St. James Westminster, Stoke Newington, Strand, Greenwich, and Lewisham (exclucing Penge). The Metropolitan Asylums hospitals contained 2460 scarlet fever patients at the end of December, against 1899, 2569, and 2659 at the end of the three preceding months; the weekly admissions averaged 214, against 215, 314, and 259 in the three preceding months. The prevalence of diphtheria showed a considerable decline from that recorded in the preceding month; the greatest proportional prevalence of this disease occurred in Fulham, Stoke Newington, Shoreditch, Poplar, St. Saviour Southwark, and St. George Southwark sanitary areas. There were 1343 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 1231, 1458, and 1524 at the end of the three preceding months; the weekly admissions averaged 157, against 185, 206, and 185 in the three preceding months. The prevalence of enteric fever showed a decrease from that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in St. Marylebone, St. Pancras, City of London, St. Olave Southwark, Camberwell, and Plumstead. The number of enteric fever patients in the Metropolitan Asylums hospitals, which had been 329, 444, and 436 at the end of the three preceding months, had further declined to 403 at the end of December; the weekly admissions averaged 51, against 61 in each of the two preceding months. Erysipelas was proportionally most prevalent in Westminster, Stoke Newington, St. Giles, St. Luke, Whitechapel, and Limehouse sanitary areas. The 19 cases of puerperal fever included three in Islington, two in Paddington, two in Poplar, and two in Wandsworth sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the four weeks ending Dec. 29th the deaths of 5687 persons belonging to London were registered, equal to an annual rate of 16·2 per 1000, against 16·5, 15·3, and 16·8 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 10·2 in City of London, 11·0 in St. Martin-in-the-Fields, 11·6 in Hampstead, 11·7 in Stoke Newington, 12·0 in St. Giles, and 12·2 in St. James Westminster; the highest rates were 20·6 in Shoreditch, 21·3 in St. Saviour Southwark and in St. George Southwark, 21·7 in Poplar, 22·3 in Bermondsey, and 23·4 in Rotherhithe. During the four weeks of December 478 deaths were referred to the principal zymotic diseases; of these, 95 resulted from measles, 30 from scarlet fever, 114 from diphtheria, 115 from whooping-cough, 78 from enteric fever, and 46 from diarrhœa. No death from any of these diseases occurred last month in Holborn or in Woolwich; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, Westminster, Whitechapel, and St. George-in-the-East; and the highest rates in St. Martin-in-the-Fields, Shoreditch, Poplar, St. Saviour Southwark, Bermondsey, and Rotherhithe. The 95 deaths from measles showed a decline of 170 from the corrected average number; this disease was proportionally most fatal in St. Luke, Shoreditch, St. George Southwark, Bermondsey, Battersea, and Lewisham sanitary areas. The 30 fatal cases of scarlet fever were 46 below the average number in the corresponding periods of the 10 preceding years; the greatest proportional mortality from this disease occurred in Hammersmith, Fulham, St. Marylebone, St. Giles, Strand, and City of London sanitary areas. The 114 deaths from diphtheria showed a decline of 104 from the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Paddington, Stoke Newington, Shoreditch, Poplar, St. Saviour Southwark, and Rotherhithe. The 115 fatal cases of whooping-cough were 57 below the average number in the corresponding periods of the 10 preceding years; this disease showed the highest proportional fatality in Kensington, Hampstead, Strand, St. George Southwark, Rotherhithe, and Battersea sanitary areas. The 78 deaths referred to enteric fever were slightly in excess of the corrected average; among the various sanitary areas the death-rate from this disease was highest in Hammersmith, St. James Westminster, St. Martin-in-the-Fields, Strand, City of London, and St. Saviour Southwark. The 46 fatal cases of diarrhœa were below the average number in the corresponding periods of the

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1900.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1900.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,589,129	—	1102	887	—	436	4	19	368	—	2816	8·0	—	95	30	114	115	—	78	—	46	478	1·4	5487	16·2	164
West Districts.																										
Paddington	130,104	—	28	13	—	7	—	2	10	—	60	6·0	—	—	1	6	2	—	1	—	1	11	1·1	158	15·8	198
Kensington	173,603	—	35	25	—	15	2	—	11	—	88	6·6	—	—	1	3	12	—	2	—	3	21	1·6	233	17·6	310
Hammersmith	110,203	—	27	24	—	10	1	1	12	—	75	8·9	—	3	3	—	2	—	4	—	5	17	2·0	123	14·6	206
Fulham	136,383	—	55	46	—	8	—	1	10	—	120	11·5	—	3	4	3	2	—	1	—	2	15	1·4	183	17·6	199
Chelsea	96,715	—	19	8	—	13	—	—	4	—	44	5·9	—	—	—	—	4	—	2	—	1	7	0·9	114	15·4	188
St. George Hanover-square	81,133	—	13	8	—	5	—	1	3	—	30	4·8	—	—	—	1	—	—	—	—	—	1	0·2	81	13·0	133
Westminster	51,657	—	12	12	—	1	—	1	6	—	32	8·1	—	—	—	—	—	—	—	—	1	1	0·3	73	18·4	165
St. James Westminster	21,457	—	8	3	—	1	—	—	—	—	12	7·3	—	—	—	—	—	—	1	—	—	1	0·6	20	12·2	167
North Districts.																										
Marylebone	139,777	—	38	9	—	17	—	—	8	—	72	6·7	—	—	3	2	3	—	2	—	1	11	1·0	179	16·7	140
Hampstead	81,766	—	15	13	—	1	—	—	2	—	31	4·9	—	1	1	2	3	—	2	—	1	10	1·6	73	11·6	135
St. Pancras	245,851	—	56	40	—	38	—	—	26	—	160	8·5	—	—	1	6	5	—	7	—	1	20	1·1	293	15·6	178
Islington	351,541	—	114	68	—	32	—	3	22	—	239	8·9	—	2	—	8	13	—	8	—	5	36	1·3	425	15·6	196
Stoke Newington	35,718	—	16	28	—	—	—	—	5	—	49	17·9	—	—	—	4	—	—	—	—	—	4	1·5	32	11·7	102
Hackney	225,519	—	47	44	—	22	—	1	20	—	134	7·7	—	3	—	4	1	—	6	—	—	14	0·8	245	14·2	122
Central Districts.																										
St. Giles	36,870	—	10	3	—	3	—	—	6	—	21	7·4	—	—	1	—	—	—	—	—	1	2	0·7	34	12·0	74
St. Martin-in-the-Fields	11,865	—	3	1	—	1	—	—	—	—	5	5·5	—	—	—	—	—	—	1	—	1	2	2·2	10	11·0	222
Strand	22,748	—	11	1	—	2	—	—	—	—	14	8·0	—	—	1	—	1	—	1	—	—	3	1·7	25	14·3	111
Holborn	29,188	—	5	2	—	1	—	—	—	—	8	3·6	—	—	—	—	—	—	—	—	—	—	—	42	18·8	160
Clerkenwell	66,007	—	11	6	—	7	—	—	3	—	26	5·1	—	—	—	1	2	—	2	—	1	6	1·2	86	17·0	109
St. Luke	40,655	—	3	8	—	2	—	—	6	—	18	5·8	—	2	—	1	1	—	—	—	—	4	1·3	59	18·9	74
City of London	26,922	—	4	1	—	5	—	—	3	—	13	6·3	—	—	1	—	—	—	1	—	—	2	1·0	21	10·2	32
East Districts.																										
Shoreditch	120,641	—	29	48	—	13	1	—	15	—	106	11·5	—	12	—	5	2	—	3	—	2	24	2·6	190	20·6	154
Bethnal Green	128,831	—	32	27	—	13	—	—	14	—	86	8·7	—	1	2	2	3	—	4	—	—	12	1·2	185	18·7	166
Whitechapel	82,220	—	15	21	—	5	—	1	13	—	55	8·7	—	1	—	2	—	—	—	—	—	3	0·5	83	13·2	88
St. George-in-the-East	48,875	—	4	3	—	4	—	—	5	—	16	4·3	—	—	—	1	1	—	—	—	—	2	0·5	61	16·3	149
Limehouse	58,944	—	8	11	—	5	—	—	9	—	33	7·3	—	1	1	—	1	—	—	—	—	3	0·7	72	15·9	156
Mile End Old Town	113,781	—	24	18	—	15	—	—	12	—	69	7·9	—	—	—	3	2	—	1	—	1	7	0·8	133	14·7	125
Poplar	170,968	—	51	69	—	23	—	2	19	—	164	12·5	—	2	1	20	1	—	5	—	1	30	2·3	284	21·7	183
South Districts.																										
St. Saviour Southwark	23,854	—	6	15	—	1	—	—	2	—	24	13·1	—	1	—	3	1	—	1	—	—	6	3·3	39	21·3	243
St. George Southwark	60,597	—	19	20	—	5	—	—	4	—	48	10·3	—	4	—	—	1	—	—	—	—	5	1·1	99	21·3	205
Newington	125,178	—	27	26	—	10	—	1	12	—	76	7·9	—	4	1	4	5	—	3	—	1	18	1·9	181	18·9	176
St. Olave Southwark	10,909	—	—	2	—	2	—	—	1	—	5	6·0	—	—	—	1	—	—	—	—	—	1	1·2	15	17·9	172
Bermondsey	85,920	—	17	24	—	10	—	—	2	—	53	8·0	—	18	—	3	1	—	1	—	2	25	3·8	147	22·3	200
Rotherhithe	41,246	—	3	6	—	7	—	—	3	—	19	6·0	—	1	—	5	5	—	1	—	—	12	3·8	74	23·4	273
Lambeth	312,152	—	65	40	—	29	—	1	26	—	161	6·7	—	2	2	5	10	—	4	—	2	25	1·0	345	14·4	134
Battersea	178,100	—	34	31	—	15	—	—	11	—	91	6·7	—	10	1	3	7	—	—	—	1	22	1·6	224	16·4	189
Wandsworth	217,004	—	56	28	—	17	—	2	21	—	124	7·4	—	4	—	1	9	—	3	—	2	19	1·1	239	14·4	167
Camberwell	268,457	—	60	64	—	34	—	1	22	—	181	8·8	—	6	2	9	12	—	6	—	5	40	1·9	304	14·8	147
Greenwich	184,582	—	67	35	—	18	—	1	14	—	135	9·5	—	7	1	5	3	—	1	—	3	20	1·4	235	16·6	174
Lewisham (excluding Penge)	93,548	—	34	14	—	6	—	—	4	—	58	8·1	—	7	1	—	—	—	2	—	1	11	1·5	105	14·6	139
Woolwich	41,600	—	3	12	—	2	—	—	2	—	19	6·0	—	▲	—	—	—	—	—	—	—	—	—	51	16·0	125
Lee	40,722	—	7	3	—	—	—	—	1	—	11	3·5	—	—	—	—	—	—	1	—	1	2	0·6	43	13·8	163
Plumstead	65,558	—	11	7	—	10	—	—	1	—	29	5·8	—	—	1	1	—	—	1	—	—	3	0·6	73	14·5	144
Port of London	—	—	—	1	—	1	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 22 cases of membranous croup.

† Including deaths from membranous croup.

NOTE.—The changes made under the London Government Act (1899) are not taken into account in the above table.

10 preceding years; this disease was proportionally most fatal in Hammersmith, Westminster, St. Giles, St. Martin-in-the-Fields, Bermondsey, and Lee. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during December was more than 43 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 164 per 1000. The lowest rates of infant mortality were recorded in Stoke Newington, St. Giles, Clerkenwell, St. Luke, City of London, and Whitechapel; and the highest rates in Kensington, Hammersmith, St. Martin-in-the-Fields, St. Saviour Southwark, St. George Southwark, and Rotherhithe sanitary areas.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon A. Patterson to the *Blake;* Surgeon R. A. Kirby to the *Blake*. Deputy Inspector-General Evelyn R. H. Pollard relieves Deputy Inspector-General Richard Coppinger at Jamaica Hospital.

ROYAL ARMY MEDICAL CORPS.

Major Lane is transferred from the Scinde District to the Bombay District and is appointed to the medical charge of the Station Hospital, Deolali. Major A. E. Morris is appointed to the medical charge of the Station Hospital, Hyderabad (Scinde). Major W. Babtie, V.C., C.M.G., is appointed to the Home District for temporary duty. Captain G. A. Moore is posted to the Station Hospital, Shorncliffe, for duty.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain A. G. Bateman, having resigned his Volunteer appointment, ceases to belong to the Army Medical Reserve of Officers. Surgeon-Captain Evan Evans to be Surgeon-Major.

YEOMANRY CAVALRY.

Herts: Surgeon-Lieutenant J. A. Turner resigns his commission.

TRANSVAAL WAR NOTES.

Civil Surgeon J. W. Aldred died at Kroonstad on Jan. 1st from enteric fever.

The following have been discharged from hospital to duty:—Surgeon-Lieutenant J. C. J. MacNab, 1st Fifeshire Volunteer Artillery; Captain C. F. Wanhill, Captain E. J. Wade-Brown, and Lieutenant W. J. Padye-Curran, and Civil Surgeons C. H. Pegg, E. H. North, J. G. Martin, and A. W. Saunders, Royal Army Medical Corps.

The *Norman* left for England on Dec. 27th, having on board Civil Surgeon H. R. Phillips.

Viscountess Parker, president of the Ladies' Committee of the Welsh Hospital, has received a letter from the Queen with reference to the report recently issued by the committee on the work of the hospital in South Africa. Her Majesty expresses her gratitude for the admirable work done by the hospital and grieves for the loss of the valuable lives among its staff in the fulfilment of their noble, self-sacrificing work.

The *Arundel Castle* left for England on Jan. 1st, having on board Civil Surgeons W. J. Waters, P. Wood, and C. C. Simpson.

The following officers of the Royal Army Medical Corps will retire during the present year: Colonel C. F. Churchill on April 10th; Colonel R. H. Carew, D.S.O., on August 10th; Lieutenant-Colonel H. H. Stokes on Sept. 11th; Surgeon-General H. S. Muir on Oct. 4th; and Surgeon-General T. F. O'Dwyer on Dec. 26th.

THE ARMY MEDICAL SERVICE OF JAPAN.

It is almost a platitude to say that the Japanese are a most intelligent, enterprising, and progressive people, for the fact has long been recognised. It is not that they are remarkable merely for their receptive and imitative faculties, for Eastern peoples are often that, but the Japanese possess, in addition to a singular aptitude for mastering details, constructive and initiative powers as well as considerable mental and physical energy. With these qualities, together with great natural courage, they are the born leaders of the yellow race and are probably destined to play an important part in history. It is not only in the organisation and equipment of their naval and military forces, but in the part they are taking in scientific research, and especially in medical science, that the Japanese have already made their mark, as indicated in Kitasato's discovery of the plague bacillus and in his new method of treating dysentery by serum inoculation. In the practice of the art of surgery, as might have been expected from a people who have exhibited so much manipulative skill and delicacy and attention to detail and minutiæ in their weird artistic productions, they excel. During the war with China in 1894–95 it will be remembered that the present Surgeon-General Taylor of the British Army Medical Service accompanied the Japanese forces in the field, and that on his return he wrote in his official report in high terms of praise of their medical organisation and arrangements during that campaign. The impression which we then formed was that if they were lacking in anything it was in applied army hygiene. The Japanese being an eminently teachable people, however, lost no time in turning the experience they gained in their war with China to account, and they have made all their hospital arrangements for the present war in that country, in which they are taking part, in common with the forces of the European Powers and America, on a very comprehensive and elaborate scale and practically with marked success. In the *Times* of Jan. 7th there is a most interesting communication from its correspondent at Tokio on the "Army Medical Service in Japan" which is well worth reading at the present time. When it is considered that Japan on the present occasion is put in comparison and competition with all the other armed powers operating in China, the result is remarkable and highly creditable to the Japanese Government. From all we have heard the German hospital arrangements in China are very good and the same may be said of the British, Americans, and Japanese, but what might not have been expected is that those of the last-named should have been as complete and excellent as they undoubtedly are.

THE CIRCULAR LETTER FROM THE DUKE OF CAMBRIDGE.

Our readers have probably perused for themselves the circular letter which the President of the Patriotic Fund has addressed to the municipal and county authorities throughout the United Kingdom. Its object apparently is to nationalise all the systems and charitable institutions at present in operation for the relief of sufferers by the war, and to organise a network of local associations in regular communication with a central council—the Commissioners of the Patriotic Fund. Various philanthropic and well-known institutions—the British Red Cross Society, Lloyd's Patriotic Fund, and Trusts for Old and Disabled Soldiers—should be, it is proposed, welded together, consolidated, and merged into one. The proposal seems to be in the abstract and in principle a sound one in that it would prevent a good deal of energy and money from being ineffective or wasted in administration, and do away with much of the existing overlapping of many societies. But the Commissioners of the Patriotic Fund have not somehow managed to obtain the trust and confidence of the nation in respect of the management of that fund. The general public, we imagine, desire to see the money they contribute for compassionate purposes go straight to the objects of their sympathy, and there is a danger, too, lest the charitable contributions to existing and well-known bodies might be seriously checked.

THE TOTAL LOSSES IN SOUTH AFRICA.

According to the War Office returns issued on Jan. 4th, 1901, showing the casualties in the field force in South Africa reported during the month of December, 1900, and total casualties since the beginning of the war up to and including the month, it would appear that during December the casualties were 118 officers and 2306 non-commissioned officers and men. 28 officers were either killed or died of wounds or of accidents or of disease and 750 non-commissioned officers and men from the same causes. The totals up to and including the month show that 421 officers and 4251 non-commissioned officers and men were killed or died of wounds, and 174 of the former (officers) and 7011 men died of disease. The total deaths in South Africa from all causes amounted to 604 officers and 11,554 men, while 1638 officers and 36,988 men were sent home as invalids. The total reduction of the military forces through war in South Africa from all causes, including deaths in that country and among invalids sent home or discharged the service as unfit, together with missing and prisoners, make up a total of 615 officers and 14,265 men, or 14,880 altogether.

A TRIBUTE TO THE ARMY MEDICAL DEPARTMENT.

Brigadier-General T. C. Porter on Dec. 29th received a

hearty welcome from the inhabitants of his native borough of Saltash, Cornwall, upon the occasion of his return from South Africa, and an address was presented to him in the town-hall by the Mayor and town council. In the course of an interesting speech upon the war Brigadier-General Porter said that he could not use the expressions "medical officer" or "chaplain" without a feeling of the deepest reverence, and added that wherever death stood in all its nakedness there was the medical officer or the chaplain, both without a feeling of any sort in their mind except the help which they could offer to the poor unfortunate fellows who then and there required it.

ASSASSINATION OF A MEDICAL OFFICER.

We much regret to announce that a Reuter's telegram from Calcutta, dated Jan. 9th, says that Captain Dudley Cater Johnston, I.M.S. (24th Bombay Infantry), senior medical officer at Loralai, east of Quetta, has been murdered in the civil bazaar by a Ghazi. The assassin was arrested. Captain Johnston qualified in 1891 as M.R.C.S. Eng., L.R.C.P. Lond. The fanaticism of the Ghazis is well known and this is by no means the first occasion upon which the lives of Europeans, both military and civil, have been sacrificed. Captain Johnston who, it will be seen, was a young officer, only entered the Indian Medical Service in 1897, and is thus untimely cut off at almost the threshold of his career.

THE BRITISH RED CROSS SOCIETY.

Lord Wantage, in a letter to the press, detailing the work done by this society, of which he is chairman, states that the total number of persons treated in the wards of the hospital ship *Princess of Wales* has amounted to 725. The Princess Christian hospital train has visited and relieved over 30 hospitals and field stations.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on Jan. 8th Sir J. N. Dick, K.C.B., in the chair, the sum of £70 was distributed among the several applicants.

Correspondence.

"Audi alteram partem."

"ISOLATION HOSPITALS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 29th, p. 1921, Mr. E. D. Marriott replies to my previous letter to you—he does not answer it. Instead of claiming that my chart proved his case I would like Mr Marriott to explain why the notified cases of scarlet fever in Bolton diminished during the years 1889 to 1894, having, of course, first assumed that the increase during 1885 to 1889 was caused by the opening of the isolation hospital in 1884. I presume that the hospital remained open during the entire period under discussion. I would also like Mr. Marriott to explain why the considerable fall of notified cases in Nottingham in 1896 followed the year of the highest percentage of removals. The very high increase of cases in 1899, the rise I am accused of omitting for my own purposes, occurred in a year with an exceptionally small percentage of removals. The fall following the highest percentage of removals known in Nottingham, and the highest number of notified cases following the smallest percentage of removals since 1887 are two facts strongly opposed to Mr. Marriott's inference; they most certainly do not prove his case.

In reference to periodic waves I think the evidence in favour of them is very strong; however, whether such waves exist or not is no proof that scarlet fever should not be aggregated, if we still consider that disease to be infectious. Mr. Marriott states that 93 per cent. (a very high figure) of notified cases are removed to hospital for isolation, and calls this "practically all," and concludes that this aggregation of "practically all" the cases "must succeed in stamping out the disease at no distant date." He then anticipates the future and explains that the reason for this not occurring "will be found in the continued infectivity of hospital discharged patients." He blames the "hospital discharged patients" for the continuance of scarlet fever in our midst; he ignores any mischief that may be caused by the 7 per cent. of infectious cases left at home, and takes absolutely no notice of a very highly important and serious third element—namely, cases that are for various reasons never notified, cases found in the large public and board schools freely desquamating and sowing the disease broadcast over their district. I do not know Mr. Marriott's definition of "return case," but to my mind all the instances he gives in his letter would come within that category.

I am, Sirs yours faithfully,

Manchester, Jan. 5th, 1901. A. J. TONKIN, M.B. R.U.I.

UNIVERSITY COLLEGE, LONDON: RETIREMENT OF THE BEADLE OF THE MEDICAL LIBRARY.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me an opportunity through your columns of letting old University College men know that Mr. Mann, the beadle of the medical library, has just been pensioned after 37 years' service? He is 80 years of age and in feeble health and it is thought that many who have known him will be glad of an opportunity of helping to make his remaining days as comfortable as possible. Subscriptions may be sent to Mr. Raymond Johnson, University College, London.

I am, Sirs, yours faithfully,

HERBERT R. SPENCER,

Jan. 7th, 1901. Dean of the Medical Faculty.

"THE TREATMENT OF PULMONARY TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—Your correspondent "M.R.C.S.," whose letter appeared in THE LANCET of Jan. 5th, p. 66, is, of course, entitled to his own opinion respecting the sanatorium treatment of consumption, though, as it seems to be in opposition to that of nine-tenths of the medical profession of the civilised world, no great importance will be attached to it by your readers. What he is not entitled to do is to cast unwarrantable aspersions upon the motives of those who are engaged in a legitimate branch of practice unsupported by evidence of any kind. I undertake to say, and I speak with knowledge, that the motives of those medical men who are carrying out this system of treatment are as free from commercial taint as those of any other class of practitioner. The life is an arduous one, and presents few attractions apart from the interest of the work itself. The suggestion that non-tuberculous cases are received, and are encouraged to believe themselves to be sufferers from the disease which they have not is simply libellous and absolutely false. I might retort by the suggestion that the serious prejudice of "M.R.C.S." against sanatorium treatment is due to the fact that it involves the withdrawal of profitable patients from the dispensation of their family attendant, but I will not stoop to his methods of controversy. So far from agreeing that the profession has "gone mad" on the subject I contend that we in this country have just come to our right mind about it, as hitherto we have been far behind other nations in this matter.

"M.R.C.S." prophesies that the open-air treatment will in a short time die. Yes, it will die when it has done its work and when consumption has become extinct. Meanwhile there is plenty of work to be done, and the system, being based on common-sense and of approved utility, will survive a good deal of adverse criticism. Sanatorium treatment of chronic diseases is, as Dr. A. H. Carter recently pointed out, much more in accord with modern conceptions than home treatment and is bound to become general. The open-air treatment, not of phthisis only but of many other maladies, has a great future before it and the sneers of "M.R.C.S." are but as dust in the balance when opposed to the reasoned approval of better informed men.

I am, Sirs, yours faithfully,

Jan. 5th, 1901. M.D.

THE LICENTIATE IN DENTISTRY AND THE ADMINISTRATION OF ANÆSTHETICS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Jan. 5th (p. 73) there is a note as to a death at Newport (Mon.) after an operation under gas and ether for the extraction of teeth in a young man aged 21

years. It would appear from the words of the report "a medical man was fetched," that no medical man was present at the operation, and that it was performed, and also the anæsthetic administered, by the dental surgeon. Also it seems that though an obstruction to respiration was thought to exist in the throat tracheotomy was not performed. Again, the female attendant stated that she believed she had taken all the sponges from the patient's throat and yet one of them was found post mortem to be fixed in the wind-pipe.

This case, if it be correct as reported, seems to me to raise the very serious question as to the justification as well as the competence of one person to undertake both the operation and the administration of the anæsthetics. Here apparently we have a dentist who has no medical qualification—and if he had it would make no difference to the issue—undertaking two difficult things, each usually regarded as sufficient to task the attention of one man. The administration of a major anæsthetic for the extraction of teeth is a very serious and responsible matter, as much so as in the case of most ordinary surgical operations. Had a medical man given the anæsthetic, or even been present, the loss of the sponge might have been noticed, and if unnoticed he might have recognised that the obstruction, whatever it was, would be obviated by tracheotomy, which he could have performed. It does not seem to me that an L.D.S. only is competent to deal with the risks and their sequelæ of serious operations *plus* the administration of anæsthetics.

Has a non-medically qualified dentist the legal right, or is he regarded by the college which grants his diploma as competent, to administer a major anæsthetic or, indeed, any anæsthetic at all? The matter is not usually one of emergency, at any rate in the case of a major anæsthetic, and the coroner has nothing to guide him as to these questions.

Dr. Dudley Buxton in his book on Anæsthetics has a paragraph apt to this case. The question, Who is to be regarded as competent to administer an anæsthetic? needs medical and legal regulation and settlement.

I am, Sirs, yours faithfully,

Jan. 5th. Q.

*** We deal editorially this week with some points in this case.—ED. L.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENT.)

The Bishop of Calcutta on Physiological Experiment.—The Hospital Ship "Gwalior" and Invalids from China.—The Progress of the Plague: Increase in Bengal.—The Famine.

THE recent utterances of Dr. Welldon, Bishop of Calcutta, may prove of considerable value. Having visited the Pasteur Institute at Kasauli he speaks of the experiments at first hand and says: "I know the process to be characterised in all its aspects by the most thoughtful and scrupulous humanity." His arguments in favour of scientific research seem unanswerable. He refers to the religious as well as the medical side of the question and on the first head quotes Genesis ix. 2, 3. This revelation of faith is without the slightest ambiguity, but the bishop also made use of another excellent argument—that of the principle of vicarious sacrifice. He refers to the awfulness of this law—how it ranges throughout nature and how it enables one species to live at the expense of the lives of others. "Wherever life, even the lowliest, is laid down for the preservation of other lives that principle is seen." Passing from the sanction of religious authority for the fact that man is entitled to take the life of the animal creation for his own, he goes on to say: "and to take it even though the process of taking it is not painless," but whether man acts according to his noblest instincts if he treats the sacrifice of animal life as a mere sport the bishop thinks open to question. Even on this head he holds very broad views and says: "I will say frankly that in my eyes the battle of man with the wild animals is rather an element in that discipline of self-defence in which men by the law of their sex are naturally engaged." Referring to the sacrifice of life which ranges throughout Nature in involuntary ways the argument is extended to show how this involuntary sacrifice passes into the sphere of free volition, from the sacrifice in which no moral element is involved to the sacrifice of the good for the good. The bishop concludes: "But if under the mysterious divine law which constitutes sacrifice the price of human existence and the penalty of human progress man is entitled to take the lives of the animals for his own life, who can doubt that what is true of mere sport is not less true of medical and surgical relief? For these the pain is less and the gain is infinitely greater. There the sacrifice is made, not for a momentary gratification of taste or triumph of skill, but for the immunity of human beings and of the lower animals themselves from the agonies of disease and death."

The hospital ship *Gwalior* has returned from China and disembarked the sick and invalid troops of the various native regiments composing the Indian contingent in China. Soon after her arrival at Hong-Kong the *Gwalior* was despatched to Taku. Having embarked invalids from Peking and Tientsin the vessel called at Wei-hai-Wei. The Maharajah of Gwalior has returned after having served for a brief period on the staff of Sir Alfred Gaselee. We understand that the ship will be again sent to the China station. The transport *India* has also arrived with nearly 1000 sick and weak men from the various native regiments and coolie corps. About 600 men—coolies and followers—were found to be weak in the chest and of poor physique, rendering them unfit to stand the winter climate. On Nov. 20th. at Taku the buckets of water kept on deck were found to be frozen into solid ice. The troops at Peking and elsewhere now are picked and strong men and are accommodated in barracks with fireplaces and a double supply of warm clothing, blankets, &c. The German and French troops are said to be suffering severely. The good health that the Indian contingent is keeping at the present time shows that everything possible is being done for the welfare of our troops.

News relating to plague is this week unsatisfactory. For the whole of India there have been 2107 deaths, as compared with 1989 for the week before and 1685 for the corresponding week of last year. The virulence of the rising epidemic seems to have been translated from the west to the east, the Bombay Presidency showing a decline, while the Bengal province shows a considerable increase. The disease is very rife in Patna (549 deaths this week against 457 last week), Saran (306 against 217), and Monghyr (110 against 74). In the Mysore province, whence 547 deaths are reported, it continues as severe as before. The recrudescence in Bangalore is declared in some quarters to be the result of the new regulations which virtually withdraw almost the whole of the checks previously imposed on the spread of the disease. In Bombay city there is apparently a recrudescence, but the increase is at present small. In Calcutta the disease is slumbering, but the general mortality is unusually high and a large number of suspicious deaths are occurring. The general mortality in Bombay city has again risen and now stands at 896 for the week. Of this number 102 deaths occurred from plague. The births being about the same as last year it is probable that the population is about the same. The curious increase of deaths from phthisis continues. As compared with Calcutta it is important to note that about 40 cases of plague are in the hospitals, whereas there is not a single case in the hospitals in Calcutta.

Inoculation in Bombay city has sunk to practically nothing and in Calcutta there is no sign of any attempt on the part of the authorities or of the people to take advantage, in view of the probable approaching outbreak, of this protection. In Calcutta everything is apparently being sacrificed for the huge experiment of wholesale disinfection. We are informed that over 200,000 rooms, chiefly of the native huts, have been disinfected; in the course of a few weeks almost the whole of the native quarters will have had the ground floors disinfected.

The prospects of the famine in parts of the Deccan in western India are unsatisfactory. Owing to the deficiency of rain in this district again this season the crops have withered. The people are returning to the relief works in increasing numbers as there is no demand for field labour. It is estimated that relief works for at least 80,000 will have to be maintained in that district until the advent of the next monsoon. For the whole of India there are still about 250,000 persons on relief—about two-thirds of this number are engaged on relief works, the remainder receiving gratuitous relief.

Dec. 22nd, 1900.

SURGICAL ANÆSTHESIA BY THE INJECTION OF COCAINE INTO THE LUMBAR SUB-ARACHNOID SPACE.

(FROM A CORRESPONDENT.)

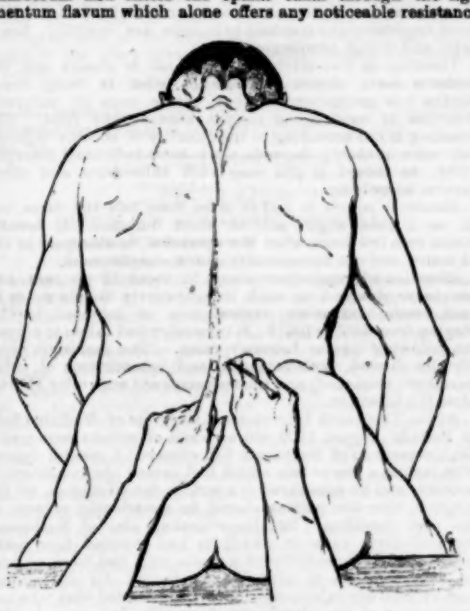
THE event of the late surgical year in Paris has undoubtedly been the impetus given by Tuffier to the method of inducing anæsthesia by medullary injections of cocaine, a suggestion already made and acted upon by Bier of Kiel[1] and Seldowitsch[2] of Russia and Corning of Chicago,[3] but which had left little impress upon current surgical practice or literature. Tuffier's first publication on the subject was made more than one year ago in the *Presse Médicale*, Nov. 15th, 1899, and since then the interest aroused has been abundantly proved by the mass of observations and criticism recorded.

To judge by the most recent *résumé*[4] of the subject one would almost think that the final cry of "Eureka" had been raised and that a general anæsthetic had been found to largely replace chloroform and ether, free from both their dangers and their inconveniences. Here and there, however, a few warning voices have been raised, and it is interesting to note that England, with her characteristic conservative caution, is lagging behind the general movement.

A rapid survey will enable us to pick out the more salient features of the subject, while the readers of THE LANCET will no doubt be interested even in the details of the important points, such as the technique of the injection, the after-consequences and effects of the cocaine, and the nature of the operations in which it has been used. Tuffier was first led to use it as a means of relief in the case of a young man suffering from an inoperable osteo-sarcoma of the ilium whom morphia failed to relieve. The result of the injection of cocaine was striking. The patient, who was crouching down in the position of greatest ease, felt the pain disappear in a few minutes and was even able to rise. There was at the same time absolute anæsthesia reaching to the umbilicus. Unfortunately the relief lasted only a few hours and the injection was repeated two days later with similar effect, pressure over the tumour for some hours causing no pain whatever. A few days later a similar injection was tried for a patient with a recurrent sarcoma of the thigh, and to Tuffier's surprise he was able to remove completely the tumour with absolutely no pain to the patient, the anæsthesia lasting over an hour. At first, therefore, used only in the surgery of the lower limbs, Tuffier rapidly extended its use to operations upon the perineum, the rectum, the anus, the bladder, the ureter, the kidney, and such laparotomies as hysterectomy, removal of the appendix, and even gastro-enterostomy. Finally, removal of the breast has been effected with complete anæsthesia. Convinced of the *absolute harmlessness* of the injections, Tuffier[5] then used them in general gynæcology and performed such operations as hysteropexy, drainage of salpingitis, ovariotomy, vaginal hysterectomy, &c., with equal success. Legueu,[6] however, complains that in one of his three vaginal hysterectomies the anæsthesia was not perfect and that when strong traction was made upon the uterus the patient complained of abdominal discomfort.

TECHNIQUE.

The details of the technique followed are given in the *Semaine Médicale* of May 16th, 1900, and later Tuffier is careful to disclaim any originality save in some practical technical points of his procedure. An ordinary hypodermic syringe will suffice, provided its construction admits of absolute sterilisation. The best, therefore, is the glass syringe made by Luer, which can be boiled without injury and which never gets out of order. The needle should be strong, of platinum, about nine centimetres in length—i.e., three and a half inches—with its penetrating sharpened portion cut very short. The solution of cocaine used is 2 per cent. and must be freshly prepared and sterilised. It seems, however, probable that in the long run weaker solutions will become of more frequent use and that the solution of cocaine used will vary from 1 in 100 to as little as 1 in 400. The patient should be seated, bent forward slightly, with both arms in front of him (see figure). The lumbar region is thoroughly cleansed and the anatomical landmarks are noted. It will be found that a horizontal line between the two highest points posteriorly of the iliac crests passes immediately below the fourth lumbar spinous process. Above or below this line in the intervertebral space the needle will freely enter the medullary canal. The left index then marks the fourth spinous process and the patient is told to bend well over forwards, thus increasing the space between the vertebræ by nearly three-fifths of an inch. The needle alone is then entered at about a centimetre (two-fifths of an inch) to the right of the middle line in a direction forwards and inwards in the third or fourth lumbar interspace, as may be selected. The third lumbar interspace is that commonly chosen, but the fourth may be punctured with equal facility and effect and Legueu frequently injected the cocaine into the second lumbar space. It is interesting to recollect that Corning's first injection was made between the twelfth dorsal and the first lumbar vertebra. The needle thus pierces the skin, the subcutaneous tissue, the lumbar fascia, the sacro-lumbar muscles, and the quadratus lumborum and enters the spinal canal through the ligamentum flavum which alone offers any noticeable resistance.



Cocainisation of the spinal canal.

As the needle enters the subarachnoid space the absence of resistance is at once felt, and almost at once the clear, yellowish, cerebro-spinal liquid escapes, drop by drop. The syringe has been already prepared, containing from one to two cubic centimetres of the 2 per cent. solution—i.e., from one to two centigrammes of cocaine (from 20 to 30 minims, containing about a quarter of a grain of cocaine)—and is now fitted to the needle and the solution is very slowly injected. The quantity of cocaine injected, it will thus be seen, is very small, and yet the anæsthesia resulting will last about one and a half hours. The little puncture is then sealed with collodion, the patient lies down, and an assistant at once begins to cleanse and to prepare the field of operation. The analgesia passes gradually from the feet upwards,

[1] Bier: Versuche über Cocainisirung des Rückenmarks, Deutsche Zeitschrift für Chirurgie, 1899, p. 361.

[2] Seldowitsch: Centralblatt für Chirurgie, 1899, p. 1110.

[3] Corning: New York Medical Journal, 1885, p. 483. See also Marcus, Medullary Narcosis (Corning's method), its history and development, Medical Record, October, 1900, p. 561.

[4] Tuffier: Un mot d'historique à propos de l'analgésie chirurgicale par voie rachidienne, Presse Médicale, Nov. 7th, 1900 (where a full bibliography is given).

[5] Tuffier: Revue de Gynécologie et de Chirurgie Abdominale, tome iv., No. 4, July-August, 1900, p. 683. It is to M. Masson, the publisher of this admirable review, and to Dr. Tuffier's courtesy that I am indebted for the plate accompanying this article.

[6] Legueu: De l'Anesthésie de Cocaïne et d'Eucaïne, Presse Médicale, Oct. 27th, 1900.

and for a laparotomy it may be necessary to wait from ten minutes to a quarter of an hour before commencing.

Tuffier, whose experience is probably greatest of living surgeons, has not yet observed an accident which he could attribute to the injection or to the cocaine. He has by this method performed over 200 operations of which more than half have been intra-peritoneal. Legueu[7] prefers eucaine to cocaine owing to its lesser toxicity and its greater stability during sterilisation by heat. Hydrochlorate of eucaine may be sterilised either in an autoclave or by heating the solution for half an hour on three successive days to 100° C. Hydrochlorate of cocaine, on the other hand, at this temperature will decompose into methylic alcohol, benzoic acid, and ecgonine, and can only be raised to a temperature of 80° C. Legueu's conclusion after some weeks' experience and over 50 operations is that as a method of anæsthesia it is destined to take an important place in a great number of operations, and he specifies all below the level of the umbilicus, all operations on the perineum, the lower urinary passages, the lower limbs, always supposing that muscular contractions do not too greatly embarrass the surgeon. Thus, in one case of fracture of both bones of the leg with great displacement, while Legueu was able freely to manipulate and attempt to reduce the fracture without any pain the muscular contraction persisted and a few days later the bones required to be stitched under chloroform.

Both Legueu and Tuffier maintain that throughout they have met with no serious results either during or after an operation and both enter into minute detail as to the sensations experienced by the patients. These almost at once mention itchings and tingling sensations of the legs, due possibly to some irritation of a nerve of the cauda equina. Some also refer to a passing sense of suffocation, with perspiration and pallor, all, however, of brief duration. The more important and constant symptoms are vomiting, headache, and rise of temperature.

Vomiting in two-thirds of the cases is absent and the patients seem almost unaware of what is being done. Reclus has recommended that before even an endermic injection of cocaine the patient should take food. The vomiting is not according to the quantity of cocaine injected but more probably depends upon some individual susceptibility, as indeed is the case with chloroform and other general anæsthetics.

Headache occurs in rather more than half the cases, but is, as a rule, slight and of short duration. It usually comes on a few hours after the operation, to disappear in the 24 hours, and not uncommonly causes sleeplessness.

Elevation of temperature occurs in about 20 per cent. and has been observed in such comparatively simple cases as anal fistula, varicocele, radical cure of inguinal hernia, varying from 102° to 104° F. It invariably had fallen to normal the following day in Legueu's cases. The pupils are occasionally dilated, both retention and incontinence of urine have been remarked, and the sphincter ani may relax shortly after the injection.

At the Thirteenth International Congress of Medicine held in Paris in August, 1900, more serious objections were made. Dr. Severeannu of Bucharest had observed a general depression lasting a day or two which had caused him considerable anxiety, and he considered it a serious inconvenience to the surgeon that the patient should be consciously present at his own operation. Dr. Racoviceanu,[8] also of Bucharest, reported three cases in which he had injected four centigrammes, or three-fifths of a grain, and had been obliged to have recourse to artificial respiration for 20 minutes and hypodermic injections of ether, and added that "he had knowledge of two deaths in Roumania following lumbar injection of cocaine." This statement, however, is altogether lacking in precision and receives no confirmation from other surgeons.

It is strange, too, that Racoviceanu concludes his *mémoire* by stating that while the accidents he has observed prevent him from recommending the method to others, he is personally very satisfied with the results he has obtained. Bier, the originator, is himself doubtful of its practicability and in February, 1900, wrote to Cadol[9] that he thought the method, owing to the subjective disturbances sometimes caused by the cocainisation of the spinal cord, was not yet practical. Delbet[10] concludes that it offers no advantages over chloroform, but, on the contrary, has the same contra-indications with the further disadvantage that the anæsthesia is not complete.

The number of published observations now amounts to nearly a thousand.

[7] Legueu: Gazette des Hôpitaux, Feb. 18th, 1897, De l'Eucaine en Chirurgie; and Presse Médicale, Oct. 27th, 1900.

[8] Racoviceanu: Contribution à l'Etude de l'Anesthésie Médullaire par la Cocaine. Paris, 1900.

[9] See also Cadol's Thesis, 1900, L'Anesthésie par les Injections de Cocaine sous l'Arachnoide Lombaire.

[10] Delbet: Journal des Praticiens, Oct. 13th, 1900, De l'Anesthésie par Injections Intra-rachidiennes de Cocaine.—See also reviews of several articles in Revue de Thérapeutique, Nov. 15th, 1900.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

"Irish" Butter.

AN appeal case was concluded at the Preston Quarter Sessions on Jan. 5th in which the decision, according to one of the reports, "is of supreme importance to provision merchants, farmers, and dairymen throughout the British Isles," but the British public are passed over, though one would have thought that their interest in the question deserved mention. It all turned on the oft-debated point of the percentage of water in the butter. A company with the quaint title of "The Peace and Safety Industrial Society, Limited," of Rawtenstall, had been convicted by the Rossendale magistrates of having sold a pound of butter "not of the nature, substance, and quality demanded by the purchaser," as it contained 19·30 per cent. of water, contrary to Section 6 of the Food and Drugs Act, 1875. Two methods of making butter are used in Ireland, in one of which it is treated with a strong solution of salt, which is called "brining." By this method it is very difficult to bring the quantity of water left in the butter below 20 per cent., so that if pickling, or "brining," be a "right and necessary process," the 19·30 per cent. present in this case was "unavoidably mixed in the process of preparation." It seems that all "Irish" butter, as popularly understood, is made in this way, while Kiel, or "Irish creamery" butter, is made with dry salt. The former is made to keep for some time, while the latter, less salted, is used as fresh butter. The case was an attempt to question the system of "pickling" as against "dry-salting," with a view to bring about a uniform standard of 15 or 16 per cent. or thereabouts of water as an outside limit in all butter exported from Ireland. "Irish" butter comes into England in enormous amount, of which Lancashire takes a large proportion, and it is said that a standard lower than 20 per cent. would imperil this trade. One solution is that there should be two standards, one for each class of butter. The question of fraud scarcely enters, for "Irish" is known to be lower in quality than Kiel or "Irish creamery" and sells at a lower price. It is very largely used by the working classes in Lancashire and would probably be preferred to the less heavily salted Kiel or creamery butter. The decision of the magistrates was that the conviction should be quashed and their opinion was unanimous "that the question of fixing a presumptive standard or standards merits the early attention of the Board of Agriculture."

Proposed Jewish Hospital.

The conference on the proposed Jewish hospital for Manchester was resumed yesterday under the presidency of Councillor C. Dreyfus. Two gentlemen (the Rev. Dr. Salomon and Mr. N. Laski) said that owing to the holidays no reply had been received from the hospital authorities, but the Rev. Dr. Salomon was almost sure that it would be a favourable one. He wished to bear testimony to the kind treatment the Jewish patients received "at the hands of the doctors and nurses." It was thought by some that the committee was not representative, and it was agreed to invite representatives of the Jewish congregations and charitable committees in the city to discuss "the various suggestions for attaining the desired end." The chairman thought that repeated adjournments did no good, but he hoped that in a fortnight or three weeks they would arrive at some definite conclusion. The feeling on the whole seems rather in favour of a Jewish hospital than to make use of those hospitals now existing.

Milk and Enteric Fever.

At the meeting of the Salford Council on Jan. 2nd it was stated in a report from Mr. C. H. Tattersall that there had

been 19 persons suffering from enteric fever within a fortnight in the Regent-road district, all of whom had been consuming milk supplied by one dealer. The farms from which the milk had come were visited by the medical officer and the veterinary inspector and found free from disease; but the milkman had been ill, and though his illness was said to be pneumonia it was extremely suspicious, and in Mr. Tattersall's opinion this was the source of infection. Instructions had been given to "close the milkhouse unless the dealer consented to be removed into the country within 24 hours so that his premises might be thoroughly disinfected, and also that various sanitary alterations be made to the back premises." These precautions were no doubt good as regards Salford, but if the man were still a source of infection he would be an undesirable guest in "the country," and it would have been better that he should have been sent to a hospital where isolation could have been practised. If, on the other hand, he had ceased to be a source of infection, although the disinfection of the premises was right it does not seem that his removal was required.

"*Friendly Society Notes.*"

In an article on friendly societies from "A Special Correspondent," which appeared in the *Manchester Courier* of Jan. 3rd, "the difficulties between the medical profession and the friendly societies" are said to "seem as far off a settlement as ever." It is interesting to see how the question strikes a lay person, evidently an admirer of the societies. He says that representatives on the "board of conciliation" were long ago appointed, "but the medical profession, which at first responded so readily, has shown a curious dislike to accepting any practical scheme of considering disputes and removing difficulties," which the writer thinks unfortunate for the profession, "as it cannot break down the system of combination, even if it were desirable to do so," and that it would be better to accept the inevitable. He says the profession recognise that combination secures, by small weekly payments for medical attendance, large sums "which otherwise would be spent in an entirely different manner." Does this mean that if medical attendance were not paid for in this way it would not be paid for at all? He then goes on to say that the profession, "recognising this, and being ready to profit by it, ... at the same time wish to pick and choose and say which of those who have paid shall receive the benefit." This apparently refers to the question of wage limit or to there being some arrangement to prevent the rich man paying his paltry pence into the treasury and insisting that he shall receive the medical benefits intended for those who cannot pay the modest charges of the general practitioner. Some such arrangement for preventing an abuse of the system seems only equitable, but this "Special Correspondent" says that "so long as this attitude continues to be adopted by the medical profession so long will the difficulty continue. There may be abuses in connexion with the existing system, but they are trifles light as air when put in the scale against the advantages—advantages shared alike by the medical profession and the general community." A fine passage no doubt from the journalistic standpoint, but the writer will not find many medical practitioners enthusiastic about the advantage of attending the well-to-do shopkeeper or employer of labour for less in many cases than a penny a week as his individual payment.

Long Service.

On Dec. 20th, 1900, at the meeting of the Northwich Board of Guardians a letter was read from Mr. Thomas Moreton stating that after 41 years' service as district medical officer, vaccination officer, and medical officer to the workhouse he was, owing to ill-health, obliged to resign these offices. The resignation was accepted with regret and a resolution was passed thanking Mr. Moreton for his services in the interests of the public.

Manchester Volunteer Medical Staff Corps: Further Increase of Establishment.

Information was received at headquarters on Jan. 7th that three additional transport companies were to be formed in connexion with this corps. This will necessitate the enrolment of three officers and 120 non-commissioned officers and men in addition to the two transport companies already formed. A special staff sergeant instructor from the Army Service Corps has been attached to the corps by the War Office to carry out all the necessary instruction required. The object of these companies is to provide for the driving of the ambulance wagons and service wagons which are part of the equipment of a bearer company and for the proper care of horses, wagons, harness, &c., which are used in the conveyance of wounded and sick soldiers. The training is full of interest and each member who joins goes through a complete course of riding, driving, and stable management. Many young men in Manchester and neighbourhood will no doubt avail themselves of this opportunity of learning everything connected with horses, and probably numbers of candidates will apply during the next few days at the headquarters of the corps at 336, Chester-road, Manchester, to obtain particulars.

Drink Tragedy.

An inquest was held on Jan. 7th by the city coroner concerning the death of a middle-aged woman who died on Jan. 4th in the Ancoats Hospital from the effects of severe burns. The report speaks of it as disclosing "a story of singular pathos," of the apparently ungovernable craving of the woman for drink, and of her employing her boy, 10 years of age, to fetch it for her. According to his narrative he was sent soon after daybreak on Dec. 3rd to pledge his father's Sunday clothes, for which he received 9*s*. His mother sent him seven or eight times for whisky, all of which she drank herself. It was her frequent practice to send him to pawn clothes and to fetch whisky with the proceeds. "He usually went for whisky on Saturdays and Mondays." After drinking the whisky she fell asleep before the fire and he went out to "play." An elder brother found her lying unconscious with her clothes in flames. She was taken to the hospital where she died. The publican denied that he served the boy, but the coroner believed the latter after carefully investigating the conflicting statements. This tragedy might have been averted if there were safe custody for habitual drunkards and if the selling of drink to young children were made penal. Nothing is said in the report about the husband, but what a picture the story gives of a wretched family life ruined by drink.

Arsenic in Beer.

Legal proceedings have been commenced in connexion with some of the cases of arsenical poisoning by beer.

Jan. 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

THE annual general meeting of the contributors to the Royal Infirmary of Edinburgh was held in the Council Chambers, Edinburgh, on Jan. 7th, Lord Provost Steel being in the chair. Mr. W. S. Caw, the clerk and treasurer, submitted the manager's annual report for the year ending Oct. 1st, 1900. The total number of patients treated in the hospital during the year had been 9569, as against 9694 in the previous year. The average daily number of patients was 701, as against 711, and the average daily number of children was 58. The average time each patient was under treatment was 26·7 days, this being exactly the average of the previous year. Of cases admitted Edinburgh sent in 4668, Leith 513, and the country 3733. There had been 768 deaths, and of these 218 took place within 48 hours after the patients' admission. In the medical and surgical out-patient departments 32,455 cases were treated, being an increase of 3016 on the previous year. The ordinary income amounted to £30,009 0*s*. 5*d*., as compared with £30,739 10*s*. 7*d*. for the preceding year. The ordinary expenditure amounted to £47,868 5*s*. 6*d*., being £3986 1*s*. 7*d*. more than in the previous year. The entire ordinary expenditure during the year (including the cost of out-patient departments) per average occupied bed was £68 5*s*. 8½*d*., or £6 11*s*. 4*d*. more than in the previous year. The legacies and donations of £100 and upwards received during the year amounted to £69,314 12*s*. 8*d*. In this total was included the munificent donation by Mr. Thomas Aitken of Nivingston of £40,000, in commemoration of which the managers had named a ward. The capital expenditure amounted to £21,038 15*s*. 10*d*. in all, the principal items being £14 599 17*s*. 11*d*. from the extension fund for the new pavilions, and £4260 8*s*. 1*d*. from the general fund for reconstruction of kitchen and stores. In addition to the "Aitken" ward two wards in the new Gynæcological Pavilion were named the "Yule" and

the "Waddell" wards respectively, to commemorate the names of Mr. J. L. B. Yule and Mr. Peter Waddell, who both left large bequests to the institution. At the beginning of the year the nursing staff numbered 184, and at the close of the year 195. The average for the year was 192. There had been 670 applications for admission, against 578 in the previous year. It was interesting to note that the matrons of 39 Scottish institutions had received their training in Edinburgh Royal Infirmary. The draining and plumbing of the older part of the infirmary were being completely renewed according to a scheme elaborated by the burgh engineer. The total number of patients admitted to the convalescent home at Corstorphine during the year had been 1321. The daily average was 70·1. The managers regretted to report that the income of the convalescent home failed to meet the expenditure by the considerable sum of £1225 4*s.* 8*d.* The adoption of the report was formally moved by the Lord Provost and seconded by Mr. Patrick Blair, W.S. The following were elected managers to represent the contributors for the ensuing year: Dr. Claud Muirhead, Sir Andrew Macdonald, Mr. Patrick Blair, W.S., Colonel M'Hardy, C.B., Miss E. S. Haldane, and Miss Agnes C. Imlach. The meeting was adjourned for a fortnight to receive the report of the committee of contributors.

The Western Infirmary, Glasgow.

There are some indications that the Western Infirmary, Glasgow, will ere long be extending its borders. At a recent meeting of contributors it was announced that nearly 300 patients were waiting for admission, a state of matters which must necessarily lead the directors to contemplate a considerable increase in the number of beds. The directors are at present engaged in raising funds for the rebuilding of the out-patient department. These proposals, together with the schemes for providing increased laboratory accommodation at the university and for the building and equipment of a new technical college, offer abundant opportunities for the liberality and patriotism of the inhabitants of Glasgow and the west of Scotland.

New Salmon Hatchery for the Tweed and Teviot.

In consequence of a movement which was started two years ago a salmon hatchery for the river Tweed has just been erected. The hatchery, which is fitted with all the modern improvements, is situated at East Learmouth, about a mile from Cornhill-on-Tweed, on an excellent site which has been granted by Earl Grey. The management of the hatchery is under the supervision of Mr. F. J. Douglas, Springwood Park, Kelso, and Mr. George Grey of Millfield. The hatchery is a private undertaking with which the River Tweed Commissioners have no official connexion, and the cost of which has been subscribed to by every river proprietor from Torwoodlee to Tillmouth. The building is 48 feet long by 20 feet wide and seven feet high inside. It is fitted with 12 boxes capable of holding in all 18 grilles, so that the 12 boxes combined have a capacity for about 300,000 salmon ova. If the fry were hatched three times in a season the output would not fall far short of 1,000,000 salmon fry. The water-supply is carefully filtered before passing to the boxes. There is in the hatchery an impounding tank of 1100 gallons capacity for keeping the salmon in after capture until they are ready for spawning. The young fry will be kept until they are six months old. For this purpose six ponds are to be constructed 40 feet long by eight feet wide by four feet deep. There are those who think that fish-culture may play an important part from a medical point of view in the future.

Jan. 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Public Health of Dublin.

AT a meeting of the Dublin Sanitary Association held on Dec. 14th, 1900, the council noted that in the week ending Dec. 8th, only 17 cases of scarlet fever were notified in the borough of Dublin and the urban districts of Rathmines and Pembroke, while the admissions of scarlet fever cases to hospital were 17. This would imply that several cases escaped notification, as it is not likely that all the patients were sent to hospital. The corresponding figures in reference to measles, typhoid and typhus fevers, with diphtheria, seemed to point to the same conclusion. The council met again on Jan. 3rd, and, having received in the meanwhile many returns, observed that a wide diversity as to the diseases which are notifiable existed in the several districts which have adopted the Act. Thus Pembroke requires whooping-cough and measles to be notified, while Rathmines and Bray require neither of those, but Rathmines specifies dysentery. Such variations in the list of notifiable diseases seriously cripple the working of the Act. The Corporation of Dublin must soon consider the report of the Commission which sat in Dublin a year ago and advised—"That the duties of medical officer of health should no longer be discharged by the present 16 dispensary medical officers of health, but that in future those duties should be discharged by an assistant medical officer of health who should receive an adequate salary and who should give his whole time to the duties of his office." In the meanwhile, at a meeting of the municipal council held on Jan. 7th the chairman of the Public Health Committee moved the adoption of the report from that committee *in re* recommendations of the committee appointed by the Local Government Board of Ireland to inquire into the public health of the city of Dublin. The report, which was unanimously adopted by the committee, contained many recommendations in reference to the scheme for housing a large number of the labouring and poorer class, the regulation of tenement houses, the inspection of dairy yards, arrangements as to hospitals, &c. It was formally brought forward by the Lord Mayor and passed unanimously. A long discussion took place subsequently as to the adoption of Podewell's apparatus for the destruction of diseased meat so strongly recommended by the delegates recently sent out by the corporations of Dublin and Belfast to inquire into the system adopted in the larger continental towns. An amendment postponing the report for six months was carried. The council then addressed itself to the question whether tuberculosis should be included in the list of notifiable diseases. The Lord Mayor was strongly in favour of the proposal and remarked that although the notification of tuberculosis was not compulsory in England no city in England showed a record of 1000 deaths every year from that disease. Ultimately a suggestion to postpone the matter in order to acquire further information was adopted.

The Rainfall in Belfast.

The total rainfall for the year 1900 in Belfast was 40·07 inches, being 0·71 inch in excess of that of the previous year. In December there were only eight days on which rain did not fall and from the 23rd until the end of the month there was not a dry day, and on one day (Dec. 26th) 1·03 inches fell. The total amount of rainfall for December was 5·26 inches. These facts indicate that Belfast is one of the wettest places in the kingdom.

The Royal Victoria Hospital, Belfast.

A gentleman in Holywood, near Belfast, in gratitude for services received some years ago by his son when a patient in the Belfast Royal Hospital, has given property to the endowment fund of the Royal Victoria Hospital which will secure an annual rental for ever of upwards of £50. This is one of the largest gifts which the charity has yet received.

Death of James Ross Thomson, L.R.C.P. Edin., C.M. Glasg.

I regret to announce the death, at the advanced age of 84 years, of Mr. J. R. Thomson, which took place at his residence, Church-street, Ballymoney, on Jan. 7th. He had practised almost all his life in Ballymoney, where he was medical attendant to the union workhouse. He was buried on Jan. 9th. Enjoying a large *clientèle*, Mr. Thomson was greatly liked both by rich and poor. He was compelled by advancing years to retire a few years ago from his workhouse duties, in which he was succeeded by his nephew.

Scarlet Fever in Portadown.

An epidemic of scarlet fever is prevailing in the urban district of Portadown. Mr. J. L. Rowlett, medical officer of health, advised the Portadown District Council that a suitable disinfecting chamber should be provided to sterilise the clothing, and that all persons suffering from the disease should be isolated in an infectious hospital; but to this course both the parents and apparently (from the discussion at their meeting on Jan. 4th) some of the Portadown councillors object.

Jan. 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Sanatorium of Angicourt.

IN my last letter I mentioned that this sanatorium after having taken 14 years to build was just about to be opened. The cost has been enormous owing to the old-fashioned notions of the architects, for instead of building lightly constructed edifices of brick and iron in isolated blocks after the methods approved of by modern hygienic science, they have constructed a veritable barrack in stone which will only hold a small number of patients, which has taken an interminable time to build, and which represents many persons dead from tuberculosis who succumbed while they were waiting for the finishing of the building where they hoped to be treated. Although the sanatorium has at present no patients, yet for the last two years it has rejoiced in the possession of a director and this official has recently sent an appeal to the Hospitals Medical Society praying its members to formulate the conditions of admission to the sanatorium and whether its benefits are to be reserved for quiescent cases of tuberculosis or whether acute cases are to be admitted. A committee of the society, composed of M. Faisans, M. Merklen, M. Mosny, M. Rendu, and M. Siredy, have reported on the matter and without entering into the question of acute or quiescent cases have drawn up the following rules. 1. The Angicourt sanatorium shall be open to indigent inhabitants of Paris afflicted with pulmonary tuberculosis, but whose lesions are presumably curable. 2. No patient shall be admitted to the sanatorium without his furnishing a sanitary record (*dossier*) drawn up by his medical attendant showing clearly his family and personal history, a history of his tuberculosis, and a complete daily clinical record extending over at least eight consecutive days setting out details of his pulmonary lesions, his rectal temperatures, his pulse, his respiratory condition, an analysis of his urine, his weight, and the results of a microscopical examination of his sputa, including the results of a search for bacilli carried out in more than one method. 3. All these *dossiers* shall be examined periodically by a medical committee appointed for that end by the Hospitals Medical Society. The committee further say that records corresponding to the sanitary *dossiers*, which shall be drawn up during the stay of the patient in the sanatorium will allow of the medical director forming an opinion of the efficacy of the curative properties of the sanatorium treatment and consequently of the advisability or the reverse of keeping up the sanatorium. This report of the committee was carried by the society unanimously. It is evident that if the authorities succeed in getting drawn up both the sanitary *dossiers* and the records illustrative of the patient's condition while in hospital there will be a grand opportunity for making an experimental study of the results of treatment, but it is much to be feared that in the case of many of the patients who will belong to just that very poor class who do not consult a medical man with regularity, it will be impossible to obtain sufficiently accurate details of their condition, for they will not have been under observation for a sufficiently long time. The Hospitals Medical Society should have gone a step further and arranged for a sort of permanent consulting institute at which patients might apply with regularity and so have their *dossiers* accurately drawn up.

The Alcohol Question in Parliament.

The Chamber of Deputies and the Senate have just completed the draft of a Bill which has been for a long time in preparation with regard to the trade in alcoholic drinks. The debates on the matter were interminable and showed in a cruel light the pretensions of the trade, who did not hesitate to poison a whole country and to destroy their fellow-creatures if only they could be assured of a sale for their goods. Under such conditions the crusade against alcohol which certain philanthropists started and which was warmly supported by the medical profession presented almost insuperable difficulties. How try to diminish the consumption of alcoholic drinks in France when a great part of the population gets its livelihood by making the same and elects those members who form a majority of the Chamber? How restrict the number of drink-shops when it is by these that the deputies are practically elected? How hope to restrain the sale of alcohol by fiscal laws when even the new law respects the *privilège des bouilleurs de cru*—i.e., the right of distilling alcohol without further taxation—which every proprietor who makes wine or cider from his own vineyard or orchard possesses? The fraud to which this right gives rise is most extensive and it is calculated that the revenue loses 400,000,000 francs per annum owing to the frauds which this right brings in its train. It is quite common to see large landowners distil alcohol not only from the produce of their own lands but also from wine or cider surreptitiously brought in. Besides, the inspectors whose duty it is to prevent these frauds are generally powerless owing to the amount of electoral corruption which exists. A too zealous agent runs the risk of being recalled by the deputy for his district whose election is generally in the pocket of the large landowner. Medical men and hygienists have at least done their part as regards the thousand-and-one varieties of alcoholic drinks sold under the name of "amers" and "apéritifs" which play such a large part in the alcoholic intoxication of France. Many have demanded that these preparations should be ruinously taxed, but the deputies, with the fear of the drinkshop before their eyes, have not dared to accept the proposals. A Socialist deputy, however, M. Vaillant, had the ingenious idea of asking that the sale of those alcoholic drinks which the Academy of Medicine had definitely pronounced to be harmful to the public health should be interdicted, a demand which the deputies dared not refuse, and hence will start a far-reaching reform if the Minister concerned has only the courage to carry out the provisions of the Bill. M. Vaillant persisted in his campaign, for when the Bill after having passed the Senate came down to the Chamber of Deputies a second time for amendment M. Vaillant complained that the Minister in charge of the Bill had not been sufficiently categorical; and he succeeded in getting the Chamber to pass a resolution that the Government from henceforth should get the Academy of Medicine to declare that *liqueurs apéritifs* and other alcoholic drinks containing essences were dangerous to the public health, so that their manufacture, circulation, and sale should be put a stop to.

Deaths of Medical Men in Paris.

Last week there occurred the deaths of several well-known medical men. Dr. Béranger-Féraud, formerly *médecin en chef* to the navy and President of the Conseil Superieur de la Marine. He left a number of valuable works on the subjects of the pathology of tropical diseases and on pathology from the standpoint of a naval surgeon.—The death is also announced of Dr. de Beauvais, one of the oldest of the Paris practitioners, who died at the age of 79 years. He left a valuable collection of clinical notes on cases and on practical therapeutics and the reputation of a high-minded and courageous man. He was formerly President of the Medical Society of Paris and chief surgeon to the prisons. In 1848, when *interne* at the ambulance station of St. Lazare, he nearly died from the effects of septicæmia contracted during the performance of an operation. He worked magnificently through the cholera epidemic of 1849 and was at the early age of 28 years made a Chevalier of the Legion of Honour as a reward for his conduct. In 1871, while serving as chief medical officer at Mazas, he was very nearly being shot by the Communists for being too kind to the unfortunate hostages.—The deaths are also announced of Dr. Duclos of Tours, professor of clinical medicine at the medical school of that city; of Professor Dubreuil, professor in the Faculty of Medicine of Montpellier and formerly *professeur agrégé* in the Paris Faculty of Medicine; and last, and most distinguished of all, of Professor Potain.

Jan. 8th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Professor Grassi and the Mosquito-Malaria Theory.

PROFESSOR GRASSI contributes some "Historical Notes on the Recent Discoveries regarding the Transmission of Malaria" to the *Policlinico* of Dec. 29th which are evidently intended as a reply to Major R. Ross's recent letter to that journal on the question of priority in the mosquito-malaria theory.[1] After enumerating the results obtained by Major Ross in his experiments with human malaria in 1896–97–98 and stigmatising them as either erroneous, inconclusive, dubious, or positively misleading, he passes to Major Ross's discovery—which he claims to have himself made with Feletti in 1890—

[1] THE LANCET, Dec. 8th, 1900, p. 1684.

of the evolution of proteosoma in the body of the gray mosquito. For this beautiful demonstration, so much admired by other authors, Professor Grassi has no word of praise, only remarking that from a zoological point of view the figures and description given by Major Ross are quite incomprehensible. He also refuses to admit that it has more than a doubtful value as a guide to what happens in human malaria, since parasites very similar to one another may have totally different life-cycles. As examples, he cites the filaria medinensis which, unlike other filariæ, does not propagate itself through the mosquito; the parasite of bovine malaria which is conveyed through the larvæ of the tick to its new host; and one of the two parasites of bird malaria which it has not been found possible to cultivate in the mosquito. Professor Grassi quotes from a note by Major Ross in the *Annales de l'Institut Pasteur*, dated Dec 31st, 1898, with the purpose of showing that Major Ross himself did not at that time regard his discovery as settling the question, but on the contrary, considered that much remained to be done before a solution could be arrived at. He next proceeds to enumerate the questions in regard to malaria which, in his view, Major Ross's experiments left unsolved: (1) whether the theory of the propagation of malaria by means of mosquitoes was borne out by facts; (2) which species of the many included under the name "mosquito" was capable of propagating human malaria; (3) whether the parasites of human malaria had a life-cycle corresponding to that of the parasite of bird malaria; (4) whether, as appeared probable, man was only an accidental host of the malarial parasite which reproduced itself indefinitely in the mosquito; (5) whether man became infected only through the bites of mosquitoes; (6) whether the new experimental data explained the empirical knowledge which we possess regarding human malaria; (7) whether other mammals acted as the hosts of the parasite of human malaria; and, lastly (8), how the facts discovered by Major Ross ought to be interpreted zoologically so as to reconcile them with those already known about other protozoa. Reverting to his own work and to that done in collaboration with Bignami and Bastianelli, Professor Grassi claims to have settled many of these questions, asserting that he was the first to proclaim the intimate relationship between the presence of the anopheles claviger and the occurrence of malaria; that to him, along with Bignami, is due the credit of experimentally inoculating the human subject with malaria by means of mosquito bites; and that to him also belongs the merit of having demonstrated by exhaustive observations and experiments, conducted with the help of Bignami and Bastianelli, the entire life-history of the human malarial parasite. He adds to these many other points which he claims to have elucidated in regard to the natural history of the parasite and the etiology of the disease, and he concludes by reiterating an assertion that our knowledge of the mode of transmission of human malaria, which he now regards as complete, at any rate for Italy, is the result of researches begun by himself, continued with the assistance of Bignami and Bastianelli, and completed by himself alone.

Legislation for the Supply of Quinine.

In the light of recent discoveries it has become evident that one of the most efficient measures for the prevention of malaria must lie in the cure of existing cases of the disease, since it is chiefly, if not entirely, from these that fresh individuals are infected by the mosquito. Unfortunately, the difficulty of procuring that sovereign remedy in malaria, quinine, has hitherto proved a great obstacle in the way of carrying out this important method of prophylaxis in many of the malarious districts of Italy, where there are often no drug stores, or where, if such exist, the quinine is often very impure, or is so high priced as to be beyond the reach of the poor labourers who most of all require it. Frequent attempts to provide against this difficulty by creating a Government monopoly have been made by Parliament from time to time, but hitherto without success, owing to the determined opposition of those interested in the sale of quinine. Now that science has been able to show the cure of malaria to be a prophylactic measure of the highest public importance every obstacle has been overcome, and a Bill has been framed which it is hoped will fully meet the necessities of the case. By this law it will become the duty of the Government to provide for the sale of quinine of the best quality at a very moderate price throughout the whole country. Where pharmacies or dispensaries are already established the sale will be confided to these, but where such do not exist it will be entrusted to the salt and tobacco shops (which are Government monopolies), or failing these to any suitable person available. The Superior Sanitary Council will determine the form and must approve the quality of the quinine, which it is proposed to supply in three-grain tabloids put up in hermetically sealed tubes, each tube to contain 10 tabloids. The preparations recommended are the hydrochlorate, the sulphate, and the bisulphate. The price of the hydrochlorate to the public must not exceed 40 centesimi (4*d*.) per tube, and that of the sulphate and bisulphate 32 centesimi per tube. No other salts of quinine must be sold except by a chemist, and the prices of these must be so regulated as to correspond with the tariff laid down under this law. Although the price thus fixed is low, it leaves a margin for profit, and the law provides that the resulting fund shall be applied to the purpose of combating the causes of malaria. A mixed commission of unpaid members selected from both Houses of Parliament and from the different governmental departments interested will administer this fund to the best advantage. The Bill embodying these provisions passed the Chamber of Deputies on Dec. 11th, 1900, and has already gone to the Senate, which it is hoped will approve of the measure as it stands.

Jan. 4th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The International Sanitary Board.

IN my last letter I gave your readers some details of the difficulties which have arisen in connexion with the International Sanitary Board owing to the death of Dr. Vitalis, the inspector adjoint. There are at present three persons who have been appointed to fill this post—namely, Dr. Duca Bey, who has been appointed by the Superior Sanitary Council; a former custom-house official who is not a medical man, and who has been appointed by the Turkish Government without salary; and thirdly, Dr. Eiterer, also appointed by the Turkish Government, to whom a salary will be paid by the Ministry of Finance. The appointment, whoever gets the post, will have to be confirmed by the Sultan. Owing to the Turkish Government having infringed the rights of the Sanitary Council by appointing one who is not a medical man, the Ambassadors have withdrawn their delegates to the Council. The conflict is particularly unfortunate at the present time owing to the outbreak of an epidemic at Smyrna, details of which follow.

Alleged Plague in Smyrna.

A very fatal disease, the nature of which is not definitely ascertained, has appeared in the village of Thomaso, near Cordelio, in the vicinity of Smyrna. The first patient was a man who suddenly fell ill in Smyrna during the first week of December, went home to his relatives in Thomaso, and died eight days after the beginning of the illness. Other cases soon occurred in the village and by Jan. 2nd there had been in three families 12 attacks with 11 deaths, the patient from Smyrna not included. In most instances the diagnosis was pneumonia. A long report on the circumstances has been sent to Constantinople by Dr. E. F. Mizzi, *médecin sanitaire* of Smyrna, pointing out that there have been no symptoms of implication of the lymphatic system, so that in the absence of bacteriological examination there was nothing to suggest plague, and arguing that the disease was probably infectious pneumonia due to "*grippe maligne*." A bacteriologist from Constantinople arrived in Smyrna on Jan. 2nd, but no examinations of the above-mentioned cases could be made, as all the deceased had been buried. On Jan. 3rd, however, a man who had been attacked with illness in Smyrna was found to have an axillary bubo and the plague bacillus was discovered on direct microscopic examination.

Poisoning Mischance at a School.

During the evening classes held at one of the schools at Beylerbey all the pupils were poisoned by the fumes from a charcoal brazier which had been lighted to heat the class-room. None of the cases, however, was attended with fatal results.

Assassination of a Medical Man.

A few weeks ago Dr. Saltellario, a well-known physician at Gumendjeh, near Salonica, was called out to see a patient, and on his way he was shot from behind, the bullet entering under his shoulder and passing through the

chest to the opposite lung. He was taken back to his house, where he is being attended by Salonica physicians. The assassins have been arrested, among them, I am sorry to say, a Dr. Tartchieff, a Bulgarian physician who is an affiliated member of the Bulgaro-Macedonian Society. Similar outrages have occurred in Bitolia, but there the assassins were not arrested.

Jan. 4th.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held recently the following candidates passed in the subjects indicated:—

PART I.

Biology.—C. H. Colley, Royal Free Hospital; and J. G. Lewis, Cardiff.

Chemistry.—E. C. Curtis, Aberdeen; F. G. Dobson, Leeds; F. W. March, Durham; W. B. Skelton, Guy's Hospital; and P. B. Whittington, London Hospital.

Materia Medica and Pharmacy.—R. S. Dollard, Royal College of Surgeons, Ireland; K. Knowles and K. A. Platt, Royal Free Hospital; W. B. Skelton, Guy's Hospital; M. C. Vivian, Royal Free Hospital; and C. Watson, Westminster Hospital.

PART II.

Anatomy.—J. Bromley, Guy's Hospital; J. Jones, Manchester; K. Knowles, Royal Free Hospital; D. J. Lewis, London Hospital; C. G. Martin, St. Bartholomew's Hospital; H. G. Peel, Leeds; K. A. Platt, Royal Free Hospital; G. H. Rains, Bristol and Westminster Hospital; A. Rogers, Cardiff; C. C. Rushton, Manchester and University College Hospital; D. A. Stepney, Royal Free Hospital; M. B. Taylor, Guy's Hospital; J. M. Wall and A. L. Walters, St. Thomas's Hospital; and J. S. Ward, Sheffield.

Physiology.—J. Bromley, Guy's Hospital; J. Jones, Manchester; K. Knowles, Royal Free Hospital; D. J. Lewis, London Hospital; R. H. McMahon, Charing-cross Hospital; C. G. Martin, St. Bartholomew's Hospital; S. Northwood, Birmingham; C. H. Osmond, Glasgow; H. G. Peel and W. V. Pegler, Leeds; A. Rogers, Cardiff; C. C. Rushton, Manchester and University College Hospital; M. B. Taylor, Guy's Hospitals; A. L. Walters, St. Thomas's Hospital; J. S. Ward, Sheffield; and S. H. R. Welch, Charing-cross Hospital.

UNIVERSITY OF OXFORD.—In a congregation holden on Dec. 17th, being the last day of Michaelmas Term, the following degrees were conferred:—

M.B.—Edmund H. Hunt, Balliol; Herbert S. French, James R. H. Sawyer, and William V. Shaw, Christ Church; Lawrence H. C. Birkbeck, Trinity; Vincent S. Hodson, Marcon's Hall.

CORONERS' INQUIRIES.—At a meeting of the Somerset County Council held on Jan. 1st a communication was read from Dr. R. L. Meade-King on behalf of the West Somerset branch of the British Medical Association, asking that a fee might be paid for giving information to coroners when no inquest was held. It was decided that a reply should be sent stating that the county council had no power to pay any such fee.

MEDICAL MAGISTRATES.—Mr. J. C. Davies, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H. Durh., of Ruabon, Denbighshire, has been appointed a magistrate for the county of Denbigh.—Mr. Harold J. Hutchens, L.R.C.P. Lond., M.R.C.S. Eng., of Colmslie Hospital, Bulimba, has been appointed a justice of the peace within the Colony of Queensland.—Mr. Norman Hay Forbes, F.R.C.S. Edin., of Tunbridge Wells, has been appointed a magistrate for the county of Kent.

SHORTHAND FOR MEDICAL STUDENTS.—The Society of Medical Phonographers offers for competition among registered medical students in the United Kingdom a first and a second prize, of the value of £5 and £3 respectively, for proficiency in the groundwork of phonetic shorthand (phonography). The examination will have for its chief object legibility, accuracy, and neatness of writing rather than speed, and will consist of two simple tests: (*a*) the ability to read at sight a passage of a few hundred words printed in a freely vocalised style of shorthand; and (*b*) the ability to write shorthand at a low rate of speed (60 words per minute) and to produce a correct longhand transcript of the passage so dictated. In this test the quality of the shorthand note as well as the correctness of the transcript will be taken into account. The passage used in each test will consist of some straightforward medical matter. The examination will be held early in May, 1901, simultaneously in London, Edinburgh, and Dublin and at any provincial medical school in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates are requested to send in their names at as early a date as possible to "The Examination Secretary, care of Messrs. Pulman and Sons, Thayer-street Manchester-square, London," who will inform them in due course as to the precise date and place of examination at each centre. There are no examination fees. The latest date for receiving names will be April 15th.

BRITISH MEDICAL BENEVOLENT FUND.—Mr. Edward East, of 26 Linden-gardens, W., is receiving and distributing clothing of all sorts. He desires us to state that the fund particularly wants quantities of warm clothing and blankets for men, women, and children.

MEMORIAL TO A MEDICAL MISSIONARY.—On Sunday, Jan. 6th, a memorial tablet to the late Charles Watt Morrison and Samuel Donaldson Cowan, M.A., M.B., C.M., was unveiled at the Young Men's Christian Association, Kirkintilloch, by Mr. R. Hudson, J.P. The tablet bears the following inscription: "Charles Watt Morrison, died at New York, U.S.A., Dec. 28th, 1897, aged 32. Samuel Donaldson Cowan, M.A., M.B., C.M.; died at sea, Sept. 14th, 1899, aged 29. In loving memory of Charles Watt Morrison, missionary teacher, and Samuel Donaldson Cowan, M.A., M.B., C.M., medical missionary, loyal and faithful members of Kirkintilloch Y.M.C.A., who went forth at the call of God to labour among the heathen at Old Calabar, West Coast of Africa. 'Good Soldiers of Jesus Christ.'"

FREEMASONRY.—The *Rahere Lodge, No. 2546.*—A meeting of this lodge was held at Frascati's Restaurant, Oxford-street, W., on Jan. 8th, the W. M. Bro. Walter Gripper in the chair. Messrs. L. E. Whitaker and H. S. Beadles were initiated into Freemasonry, and Bro. R. H. Wellington was raised to the third degree by the W. M., whilst Bros. Hepburn and Bokenham were passed to the second degree by Bro. Phin. S. Abraham, S.W. W. Bro. Brodie was nominated a steward at the forthcoming festival of the Royal Masonic Benevolent Institution and a grant of 10 guineas was made from the lodge funds in aid of this charity.

BOOKS, ETC., RECEIVED.

ADLARD AND SON, Bartholomew-close, London.

King's College Hospital Reports: being the Annual Report of King's College Hospital and the Medical Department of King's College. Vol. vi. (Oct. 1st, 1898, to Sept. 30th, 1899). Price 7s. 6d.

BAUERMEISTER, F., Glasgow.

Hand-Atlas der Hirn- und Rückenmarksnerven. Von Professor Dr. C. Hasse. 1900. Price 12s 9d.

Kursus der Pathologischen Histologie mit einem Mikroskopischen Atlas. Von Dr. L. Aschoff und Dr. H. Gaylord. 1900. Price 18s.

Atlas der Anatomie der Hirnhöhle. Von Dr. A. Hartmann. 1900. Price 16s.

Bestimmung des Sehschärfe mittelst der Uhr. Von E. Praun. 1901. Price 1s. 6d.

Methoden der Praktischen Hygiene. Von Dr. K. B. Lehmann. 1901. Price 18s. 9d.

Verhandlungen des Congresses für Innere Medicin. Von Dr. E. Leyden und Dr. R. Pfeiffer. 1900. Price 12s.

Abnorme Charaktere. Von Dr. J. L. A. Koch. 1900. Price 1s. 3d.

Schwankungen der Seelenthätigkeiten. Von Professor Jacopo Finzi. 1900. Price 1s. 3d.

Mechanik des Hörens und ihre Störungen. Von Dr. Gustav Zimmermann. 1900. Price 3s.

Das Experiment. Vice Professor J. P. Pawlaw. 1900. Price 1s. 6d.

Ursache des Alters. Von Dr. M. Mühlmann. 1900. Price 5s.

Ursachen der Lungenkrankheiten. Von Dr. N. Ph. Tendels. 1901. Price 3s. 9d.

BERGMANN, J. F., Wiesbaden; and F. BAUERMEISTER, Glasgow.

Atlas Seltener Ophthalmoskopischer Befunde zugleich Ergänzungstafeln zu dem Atlas der Ophthalmoskopie (Erste Lieferung). Von Hofrath Dr. J. Oeller.

Atlas of Rare Ophthalmoscopic Conditions and Supplementary Plates to the Atlas of Ophthalmoscopy. By Hofrath Dr. J. Oeller. English Text by Thomas Snowball, M.A., M.B. Aberd. Part I.

CARRÉ, GEORGES, ET C. NAUD, Paris.

L'Alcool et l'Alcoolisme. Par Drs. H. Triboulet et F. Mathieu. 1900.

CASSELL AND CO., LIMITED, London.

The Sick and Wounded in South Africa: What I Saw and Said of Them and of the Army Medical System. By Mr. Burdett-Coutts, M.P. Price 1s. 6d.

CHAPMAN AND HALL, London.

What is Life? or Where are We? What are We? Whence did we Come? and Whither do We Go? By F. Hovenden, F.L.S., F.G.S., F.R.M.S. Second edition. 1899. Illustrated. Price 6s.

CHATTO AND WINDUS, 38, St. Martin's-lane, London.

Herbert Fry's Royal Guide to London Charities. Edited by John Lane. 1900. Price 1s. 6d.

CHURCHILL, J. & A., Great Marlborough-street, London.
A Treatise on the Diseases of the Ear, including the Anatomy and Physiology of the Organ, together with the Treatment of the Affections of the Nose and Pharynx which conduce to Aural Disease. By T. Mark Hovell, F.R.C.S. Edin., M.R.C.S. Eng. Second edition. Price 21s.
Transactions of the Otological Society of the United Kingdom. Vol. I. Price 6s.

DAVIS, F. A., COMPANY, Philadelphia, New York, and Chicago.
Studies in the Psychology of Sex: the Evolution of Modesty; the Phenomena of Sexual Periodicity; Auto-erotism. By Havelock Ellis. Price $2 net.

ENKE, FERDINAND, Stuttgart; and F. BAUERMEISTER, Glasgow.
Atlas der Nasenkrankheiten. Von Hofrath Dr. Robert Kreig. Zweite Lieferung (Tafeln VII.-XI.). Mit Deutschen und Englischen Text. Price 6 marks.

GOVERNMENT PRINTING OFFICE, Washington.
Index-Catalogue to the Library of the Surgeon-General's Office, United States Army. Second Series. Vol. V.

KIMPTON, H., Furnival-street, Holborn, London.
Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Vol. III. Price 12s. 6d.

LIPPINCOTT, J. B., COMPANY, Southampton-street, Covent-garden, London.
Appendicitis and its Surgical Treatment. By Herman Mynter, M.D. (Copenhagen). Third edition. 1900. Price 10s. 6d.

LONGMANS, GREEN AND CO., Paternoster-row, London.
Diseases of the Anus and Rectum. By D. H. Goodsall, F.R.C.S. Eng., and W. Ernest Miles, F.R.C.S. Eng. Part I. Price 7s. 6d.

MASSON ET CIE., Paris.
Maladies des Voies Urinaires. Par P. Bazy.
L'Insuffisance Hépatique. Par A. Gouget.
Analyse Biologique des Eaux Potables. Par Dr. J. Gasser.

REBMAN, Limited, Shaftesbury-avenue, London.
A Manual of Modern Surgery: an Exposition of the Accepted Doctrines and Approved Operative Procedures of the Present Time. By John B. Roberts, A.M., M.D. Price 21s.

SAUNDERS, W. B., AND COMPANY, London and Philadelphia.
A Text-book of Pathology. By Alfred Stengel, M.D. Third edition, revised. Price 21s.
Modern Surgery, General and Operative. By John Chalmers DaCosta, M.D. Third edition, revised and enlarged. Price 21s.
Modern Medicine. By Julius L. Salinger, M.D., and Frederick J. Kalteyer, M.D. Price 17s.
A Manual of Syphilis and the Venereal Diseases. By James Nevins Hyde, A.M., M.D., and Frank Hugh Montgomery, M.D. Second edition, revised and enlarged. Price 17s.
A Compendium of Insanity. By John B. Chapin, M.D., LL.D. Price 5s.
Atlas and Epitome of Gynecology. By Dr. Oskar Schaeffer. Edited by Richard C. Norris, A.M., M.D. Price 15s.
A Manual of the Diagnosis and Treatment of the Diseases of the Eye. By Edward Jackson, A.M., M.D. Price 10s. 6d.

SEIDEL, L. W., UND SOHN, Wien.
Beiträge zur Beurtheilung der Bedeutung der Vaginalen und Sacralen Totalexstirpation des Uterus für die Radicalheilung des Gebärmutterkrebses. By Dr. Hermann von Erlach and Dr. Hans R. von Woerz.

SPRINGER, JULIUS, Berlin.
Die Arzneimittel-Synthese auf Grundlage der Beziehungen zwischen Chemischen Aufbau und Wirkung. By Dr. Sigmund Fränkel. Price 12 marks.

THACKER, SPINK, AND CO., Government-place, Calcutta.
An Introduction to Materia Medica for India, including the Preparations of the British Pharmacopœia, 1898. By C. F. Ponder, M.B., C.M., and Dr. Hooper, F.C.S., F.L.S. Price Rs. 6.

VIGOT FRÈRES, Paris.
La Pratique du Massage. Conférences 1899-1900. Par de Frumerie. 1901.

WARD, LOCK AND CO., LIMITED, London.
Mrs. Beeton's Cookery Book. A Household Guide. New Edition. Price 1s.

University College, London. Calendar for Session, 1900-1901 (Taylor and Francis, Red Lion-court, London).—Magazines, &c., for January: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, Cornhill Magazine, Sandow's Magazine.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BISSET, ERNEST, M.B., Ch.B. Aberd., has been appointed Assistant House Surgeon to the Royal Portsmouth Hospital.

CHARLES, J. R., M.B. Camb., M.R.C.P., has been appointed Casualty Assistant Physician, General Hospital, Birmingham.

NICHOLS, O., M.B. Oxon., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Hartlepools Hospital.

EVANS, R. A., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician, Swansea Hospital.

FREKE, A. H., M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Diss District in the County of Norfolk.

HEYWOOD, T. W., L.R.C.P. Irel., M.R.C.S., D.P.H., has been appointed Certifying Surgeon under the Factory Acts for the Borough of Darwen.

INGLE, C. D., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer, Langport Union, vice R. L. Hildyard.

JONES, ARTHUR WEBB, F.R.C.S. Eng., has been appointed House Surgeon to the Royal Portsmouth Hospital.

KIDD, F. W., M.D., L.R.C.P., L.R.C.S. Irel., has been appointed Consulting Surgeon to the Coombe Hospital, Dublin.

NASON, J. J., M.B. Lond., M.R.C.S., has been appointed Honorary Consulting Surgeon to the Hospital, Stratford-on-Avon.

PALMER, W. M., M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Medical Officer to the Linton District and Workhouse, vice J. A. Nealon, resigned.

PATCH, H. H. L., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Third Sanitary District of the Hertford Union.

PERRY, S. H., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Assistant Casualty Physician, General Hospital, Birmingham.

PHILLIPS, JOHN, M.B. Edin., has been appointed Physician to the Royal Portsmouth Hospital, vice R. J. Wallace.

SARJANT, F. P., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed District Medical Officer, Chorlton Union, vice B. J. Massiah, deceased.

TODD, D. B., L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator by the Westbury Rural District Council.

TURNER, PHILIP DYMOCK, M.D. Lond., has been appointed Honorary Medical Officer to the Royal Isle of Wight Infirmary and County Hospital.

WATT, T. M., L.R.C.P. Irel., M.R.C.S., has been appointed District Medical Officer, Glanford Brigg Union, vice J. Fearnley, resigned.

WHITTOME, ARTHUR, M.B., B.S. Edin., has been appointed House Surgeon to the North-Eastern Hospital for Children, Hackney-road, Shoreditch, London.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOLTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £120 per annum, with furnished apartments, board, and attendance.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon. Salary £100 per annum, with board and residence.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £80, with board and lodgings in the infirmary.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary £80 per annum, with residence and maintenance in the house.

COUNTY ASYLUM, Gloucester.—Junior Assistant Medical Officer, unmarried. Salary £120 per annum, rising £10 yearly to £150, with board (no stimulants), lodging, and washing.

COUNTY ASYLUM, Shrewsbury.—Junior Assistant Medical Officer. Salary £130 per annum, rising by £10 a year to £150, with board, lodging, and washing.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging, and an allowance for cab hire.

DORSET COUNTY HOSPITAL, Dorchester.—House Surgeon. Salary £100, with board and residence.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, London.—Senior Resident Medical Officer. Salary £70, with board and washing. Also Pathologist. Salary 100 guineas per annum.

FISHERTON HOUSE ASYLUM, Salisbury.—Assistant Medical Officer. Salary £150 per annum with board, lodging, and washing.

GENERAL HOSPITAL, Birmingham.—House Physician. Salary £70 per annum, with residence, board, and washing.

GENERAL HOSPITAL, Nottingham.—House Physician for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London.—Surgeon to the Out-Patient and Throat Department.

GUILDFORD UNION.—District Medical Officer and Public Vaccinator, Woking District. Salary £80 per annum and vaccination fees.

HAM GREEN FEVER HOSPITAL, Bristol.—Resident Medical Officer. Salary £150 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Surgeon. Salary £20, with board and residence in the hospital.

HOSPITAL FOR WOMEN, Soho-square, London, W.—Assistant Physician, also Assistant Surgeon.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon for not less than one year. Salary £40, with board and lodging.

ISLE OF THANET UNION.—Medical Officer. Salary at the rate of £40 per annum, less deduction on account of superannuation.

LEICESTER INFIRMARY.—Second Assistant House Surgeon. Salary £80 per annum, with board, apartments, and washing.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100, with board and apartments. Apply to the Secretary, Leith Offices, Liverpool.

METROPOLITAN BOROUGH OF BERMONDSEY.—Medical Officer of Health. Salary £500 per annum, rising to £600.

MILLER HOSPITAL and ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £60 per annum, with board, attendance, and washing.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL, Sunderland.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

NORTHAMPTON GENERAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum, all found except board.

NOTTINGHAM PARISH INFIRMARY.—Assistant Medical Officer. Salary £160 per annum and furnished rooms.

QUEEN'S HOSPITAL, Birmingham.—Resident Surgeon for 12 months. Salary £50, with board, lodging, and washing.

ROYAL HOSPITAL FOR CONSUMPTION, Ventnor.—General Superintendent. Salary £300, rising by £20 per annum to a maximum of £400.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence. Apply to the Secretary, Royal Sea-Bathing Hospital Offices, 30, Charing-cross, London.

ROXBURGH DISTRICT ASYLUM, Melrose, N.B.—Assistant Medical Officer. Salary £110 per annum, with board, lodging, and washing.

SCHOOL BOARD FOR LONDON—EVENING CONTINUATION SCHOOLS.—Lecturers and Examiners in First-Aid and Home Nursing. Qualified practitioners (men and women). Apply to the Clerk of the Evening Continuation Schools Committee, School Board for London, Victoria Embankment, W.C.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Ingleton, in the County of York; at Presteigne in the County of Radnor; at Chernside in the County of Berwick; at Caterham in the County of Surrey; at Staplehurst in the County of Kent; at Radstock in the County of Somerset; at Keyingham in the County of York; at Newtyle in the County of Forfar; at Lechdale in the County of Gloucester; at Syston in the County of Leicester; and at Brynmawr in the County of Brecknock.

TIVERTON (DEVONSHIRE) INFIRMARY AND DISPENSARY.—House Surgeon. Salary £80 and all found.

VICTORIA HOSPITAL, Burnley.—Resident Medical Officer. Commencing salary £90 per annum, with residence, board, and washing.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior Resident House Surgeon, unmarried. Salary £100 per annum, with furnished residence and board.

WEST HERTS INFIRMARY, Hemel Hempstead.—House Surgeon. The salary is £100 per annum, with furnished rooms, board, fire, light, attendance, and washing.

WEST RIDING OF YORKSHIRE.—Bacteriologist on the Staff of the County Medical Officer. Salary £250 per annum, rising by biennial increases of £25 to £400 a year. Apply to the Clerk to the Committee, County Hall, Wakefield.

WILLITON UNION Somerset.—Medical Officer and Public Vaccinator for the Stogursey District of the Union. Salary £80 per annum, with the extra fees for operations.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

LAWSON.—On Jan. 4th, at Fortune's Well, Portland, Dorset, the wife of David J. Lawson, M.D., of a daughter.

PEDLEY.—On Jan. 6th, at Peckham-road, Camberwell, S.E., the wife of S. Edward Pedley, M.R.C.S., L.R.C.P. Lond., L.D.S., of a son.

SOUTH.—On Dec. 28th, at Bincleaves, Weymouth, the wife of Staff-Surgeon Henry Erskine South, of a son.

MARRIAGES.

GRAHAM—THOMSON.—On the 8th inst., at St. Pancras Church, by the Rev. Hugh S. Beard, M.A., Howard Graham, M.R.C.S., L.R.C.P., L.S.A., solicitor, third son of Thomas James Graham, Esq., of Edgbaston, to Laura May, second daughter of Major Chadwick Ayton Thomson (late of 20th Hussars), of Garlie'd, Southampton.

MACAULAY—RAMSDEN.—On Jan. 9th, at Hanover Chapel, Halifax, by the Rev. J. W. Sims of Stockport, Donald J. Macaulay, M.D., L.R.C.P., L.R.C.S.E., L.F.P.S.G., of Ashfield, Queen's-road, Halifax, son of the late John Macaulay of Benbecula, Inverness-shire, to Edith Kingston, only daughter of the late Alfred Ramsden, J.P., and of Mrs. Ramsden of Kingston, Halifax. "At home," at Ashfield, Wednesday, Thursday, Friday, Feb. 13th, 14th, and 15th.

TAYLER—CLOTHIER.—On Jan. 1st, at St. Michael's Church, Highgate, George Padgett Tayler, M.B. Lond., eldest son of G. C. Tayler, M.D., of Trowbridge, to Ethel Mary, second daughter of Henry Clothier, M.D., of Highgate, N.

DEATHS.

COOKSON.—On Jan. 6th, at Nuneaton, Albert Nesfield Cookson, M.R.C.S., L.S.A., son of the Rev. Frederick Cookson, late Vicar of Stowupland, Suffolk, aged 61 years.

JACKSON.—On Jan 5th, at Woodford, Granada-road, Southsea, Alfred Jackson, M.D., aged 77 years.

LITTLE.—On Jan 6th, at Grafton House, Worthing, Edward Stephen Little, M.D., late of Wimbledon.

ROBERTS.—On Jan. 7th, suddenly, Charles Roberts, M.R.C.S., of 87, Belgrave-road, S.W., late of Dragonfield, Uxbridge, aged 65.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HOSPITALS AND SCIENTIFIC RESEARCH.

THE National Anti-Vivisection Society has issued a list of the metropolitan hospitals which have among their medical or surgical officers one or more who hold licences from the Secretary of State for the Home Department authorising them to perform experiments upon living animals, together with a list of those which are "entirely free from any connexion with vivisection" as a "guide for the charitable in the disposition of their gifts and bequests." The *Times* makes the following witty comment upon the list. "The list, nevertheless, may possibly serve a useful purpose, the very reverse of that intended by its compiler. No reasonable person can doubt that the hospitals denounced by Mr. Coleridge are among the very best in existence. If intending donors will act in direct opposition to his suggestions, they will have the greatest attainable prospect of devoting their money to good and useful purposes."

ACTION UNDER THE DENTISTS ACT.

AN action of an involved character under the Dentists Act was heard at Bow-street Police-court on Jan. 4th. The British Dental Association prosecuted one named "Scott Russell." In the course of the evidence it appeared that the business belonged to Mr. W. B. Trick, whose name appeared on the Dental Register, and who carried on the practice under the name of "Scott Russell." Mr. W. B. Trick left the management in the hands of his cousin, Mr. W. H. Trick, who although qualified had not taken the trouble to get himself registered. The British Dental Association subsequently withdrew the summons. In the course of the evidence given it was shown that Mr. W. H. Trick had held himself out to be Mr. Scott Russell, while on a door-plate was the following announcement: "Scott Russell, late W. H. Trick, L.D.S. Eng., Dental Surgeon." The case seems to open up a most important point—namely, whether members of the medical and dental professions have the right to practise under other names.

ACRODYNIA.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers inform me where I could find a full account of the epidemic of "acrodynia" which occurred in Paris in the year 1828 and how it can be diagnosed from chronic arsenical poisoning?

I am, Sirs, yours faithfully,

H. L. GORDON, L.R.C.P. & S. Edin., L.F.P. & S. Glasg.

Accrington, Jan. 8th, 1901.

*** Reference may be made to the following:—Clairat (L.): Considérations sur la Maladie Épidémique que règne à Paris, 4to, Paris, 1829. Miramond (P. R.): Sur l'Affection Epidémique qui s'est manifestée à la Caserne de la rue de l'Oursine dans le mois de Septembre, 1828, 4to, Paris, 1829. Rochette (J. G. F.): De l'Acrodynie, 4to, Paris, 1871. Rue (A.): Essai sur la Maladie qui a régné épidémiquement à Paris, depuis le commencement de l'année 1828, 4to, Paris, 1829. Vidal (E.) et Leloir (H.): Traité des Maladies de la Peau, article Acrodynie Paris, 1864. Stedman (T. L.): Twentieth Century Practice, vol. v., p. 835, London, 1896.—ED. L.

A HASTY CRITIC.

THE *Bristol Mercury* of Dec. 28th states that "that bitterly trade unionist journal THE LANCET is in a state of mind because a Bill is before the Italian Parliament to prevent any medical men practising who are not registered in Italy." Our contemporary adds that "we can see no 'malignant jealousy' in the course which the Italian Legislature is taking." THE LANCET is in the same position. Our correspondent in Rome used the words "malignant jealousy," we did not; and he applied them—we think aptly—to a few bigoted agitators and not to the Italian Legislature. We think that the *Bristol Mercury* might do us the honour of reading our columns before diagnosing our state of mind or calling us names. By the way, we see that the *Bristol Mercury* allows that "it is undoubtedly unfair to dispossess those who are already in practice." This is just what the Santini Bill proposes to do, and the commission appointed to examine the draft of this Bill has rejected an amendment of the Minister for Foreign Affairs. Visconti Venosta, proposing that existing rights should be respected.

THE MEDICAL MAN AND THE HERBALIST.

To the Editors of THE LANCET.

SIRS,—I shall be most happy for information with regard to the following case which has this day happened to me. I have been attending daily a little girl since the 31st ult. for an attack of measles with broncho-pneumonia as a complication. The little patient has made very satisfactory progress in every respect and has manifestly bridged over the worst phase of her illness since last Saturday. In the face of this improvement the father, who, I may say, is very averse to our "poisonous medicines," thought he could do no better than to write to a certain "herbalist" in whom he

has, and has always had, the most implicit confidence, with the natural result that the herbalist has already sent since last Friday 10 large bottles of some of his concoctions, and this without having seen the patient in any shape or form. The medicine was shown to me this morning by the mother of the child. Immediately this was told to me I declined to have anything further to do with the case, and have given the mother distinctly to understand that I cease my attendance from this date, and should anything of a serious nature occur she must look to the "herbal specialist" and not to me for a remedy.—I am, Sirs, yours faithfully,

Bexhill-on-Sea, Jan. 8th, 1901. R. DE MANTHEL.

**** Our correspondent did right to withdraw from the case.—ED. L.

A FEARSOME STORY.

THE *Morning Leader's* "own correspondent" sends a fearsome story from Vienna, dated Jan. 1st, to the effect that a "strike of doctors has occurred at Cracow, owing to an attempt of the local authorities to introduce a legal tariff for medical fees." The medical men, we learn, declare that they will deprive the town of medical aid until they are allowed to charge their own prices. The staff of the hospital have refused to treat a child who had been run over by a tram-car and fearfully mangled, and the medical men are holding meetings at one of which a "doctor on the staff of the hospital said that if driven to desperation they would wreak a fearful vengeance by letting loose the germs of bubonic plague and other dread diseases in all parts of the town"—forgetting, apparently, in the foolish excess of wrath that a disease germ is as likely to attack a medical man as anyone else. This trick has already been played in fiction, and we think that the new author of the story has about as much claim as the author of "Les Morticoles" to veracity. The public are not likely, we trust, to give the slightest credence to such rubbish, but none the less we must protest against the dissemination of such libels upon our profession.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—I shall be grateful if any of your readers can give me the address of a home in which a young man of good education, not of the working-class, suffering from advanced tuberculosis, pulmonary, renal, and intestinal, can be received on payment of about 30s. per week. He is not bedridden and not a case for a home for the dying, but I am anxious to get him settled in some place where he will be looked after when he is too ill to live in lodgings.

I am, Sirs, yours faithfully,

119, Upper Richmond-road, Putney, S.W., Jan 6th, 1901. J. GAY.

A.D. 2001.

THE *Scarborough Post* has issued a number dated Jan. 1st, 2001. The editor says that the object of the number "is to present a twenty-first century newspaper as we think it probably will be." Having read the very much "advance" copy of the *Scarborough Post* we congratulate our contemporary upon the imagination displayed, but if the world is to be as the *Scarborough Post* forecasts we are glad to think that in the natural course of events we shall not be alive in A.D. 2001. The prospect of electricity at 1d. per unit is fascinating, but the people of 2001 are to be annoyed by street music of a new and terrible sort, for the advent of the motor organ is prophesied. Segregation colonies will be established in the Pacific for the congenital criminals and other undesirables, and in these colonies the sexes will be divided so that the taint cannot be handed on to succeeding generations. Here we have the germ of a truly progressive idea, but humanitarianism would shrink from so drastic a course. Vagrants and tramps are to cease to exist in England in 2001, from which it can be guessed that England at that date is Tory and Protectionist, so that the soil will give occupation to all. We congratulate the editor of the *Scarborough Post* upon his idea, and we agree with him that a paper published in 1801 and composed entirely of a guess made at that date of what 1901 would be like, would be just now exceedingly interesting reading. An historical brochure, a flimsy attempt to forecast at the beginning of the nineteenth century the political conditions and relations of Great Britain and the European Powers at the end of the century, was, we believe, recently published and was comically incorrect in every way.

OPHTHALMIC STUDIES IN PARIS, BERLIN, AND VIENNA.

To the Editors of THE LANCET.

SIRS,—I should feel obliged if any of your readers would give me information on the following points:—(1) The cost, times, &c., of special courses on the eye for English-speaking medical men at Paris, Berlin, and Vienna; (2) the addresses of some good boarding-houses, not English, in these cities. I am, Sirs, yours faithfully,

Jan. 9th, 1901. HOMER.

IMPROVED ELECTRIC WIRING.

APROPOS of our remarks on the dangers of electric lighting in our issue of Nov. 24th, 1900, p. 1513, we have received from the Conduit and Insulation Company, Limited, of Ormond House, 63, Queen Victoria-street, E.C., a specimen of steel armoured insulating conduit. This consists of a steel tube ingeniously lined with insulating material. It is maintained that all electric wires should be inclosed in a tube of this kind and then absolute safety would be guaranteed. We ourselves have suggested that some such method seems to be needed in view of the strange, not to say dangerous, things which happen when the wires are simply contained in wooden cases and when the cases themselves are in precarious places. It is certain that better provision must be made to prevent the leakage of current on the electric railways, for it is stated that the increasing employment of electricity as a motive power is threatening to destroy our gas and water mains. We suppose that when the rupture of a big gas main is effected and a chance electric spark ignites the escaping gas, perhaps with a disastrous explosion, some pressure will be brought to bear up n those who employ electric power without regard to the best means of preventing the escape of waste current.

"THE CHOICE OF A CEPHALOTRIBE."

To the Editors of THE LANCET.

SIRS,—In answer to G. P.'s letter in THE LANCET of Jan. 5th (p. 75) asking for advice in the choice of a cephalotribe I should like to say that I have performed the operation of craniotomy many times and I have tried several kinds of cephalotribe, including one of my own design. The conclusion I have come to is that all the cephalotribes on the market are useless instruments. The very best instrument I have used—and I wish for no better—is Winter's modification of Auvard's combined cranioclast and cephalotribe. With this instrument craniotomy becomes a much simpler and easier operation. Dr. Jellett describes the instrument in his book on the Practice of Midwifery.

I am, Sirs, yours faithfully,

Jan. 9th, 1901. CEPHALOTRIBE.

R. M. O.—"A Text-Book of Nursing," by C. S. Weeks-Shaw (London and New York: Edward Arnold. 1899. Price 3s. 6d.).—Lectures on Medicine to Nurses, by Herbert Cuff, M.D. Lond., F.R.C.S. Eng. (London: J. & A. Churchill. 1899). The latter book is, we fancy, a work on purely medical nursing.

F.R.C.S. Ed.—Medical graduates of Brussels University, doubly qualified in Great Britain and on the Medical Register, are always held to be right in styling themselves "Dr."

H. M. D.—The question might be asked of the advertisers, but on the face of the advertisement the answer is No.

Mr. W. Parkinson Bothamley is thanked for his letter. We hope to give the subject attention.

Mr. Archibald Kidd.—The reports are published by Messrs. P. S. King and Son, London.

Mr. G. A. Brown is thanked for bringing the disgraceful matter to our notice.

Osiris.—Yes.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS

(Taken daily at 8.30 A.M. by Steward's Instruments.)

THE LANCET Office, Jan. 10th, 1901.

Date		Barometer reduced to Sea Level and 32° F	Direction of Wind	Rain-fall	Solar Radiation Vacuo	Minimum Temp. Shade	Max. Temp	Wet Bulb	Dew Point	Remarks at 8.30 A.M.
Jan.	4	30·40	S.	...	43	41	40	39	40	Overcast
,,	5	30·44	E.	...	38	35	30	31	32	Foggy
,,	6	30·31	N.E.	...	45	30	28	Fzn.	30	Cloudy
,,	7	30·09	N.E.	...	33	30	27	Fzn.	30	Snowing
,,	8	29·89	E.	...	37	30	27	Fzn.	30	Snowing
,,	9	29·63	ENE	0·19	47	42	28	Fzn.	30	Foggy
,,	10	29·90	SSE	...	65	50	30	42	42	Foggy

During the week marked copies of the following newspapers have been received: *Jersey Express, Manchester Guardian, Blackburn Daily Telegraph, Dundee Advertiser, Glasgow Herald, East Anglian Daily Times, Yorkshire Post, Echo and Times (Sunderland), The Press (Norwich), Spalding Free Press, Derbyshire Times, Buckingham Advertiser, South Wales News, Middlesborough Gazette, Bristol Times, Brierley Hill Advertiser, Evesham Standard, Western Morning News, Huddersfield Examiner, Cambrian, Pioneer Mail, Times of India, Architect, Builder, Scotsman, Citizen, Liverpool Daily Post, Leeds Mercury, Hampshire Telegraph, Bristol Mercury, Buchan Observer, Grimsby News, Mid-Cumberland Herald, Hertfordshire Mercury, Local Government Chronicle, Mining Journal, Reading Mercury, Sanitary Record, City Press, Huntingdonshire Post, Brisbane Courier, Midland Free Press, Liverpool Courier, Surrey Advertiser, Southern Times (Weymouth), Local Government Journal, Norwich Press, Topical Times, Stratford-upon-Avon Herald, Cleveland Mercury, Caterham Free Press, Stirling Journal, Keighley News, South London Chronicle, Tewkesbury Record, Walsall Advertiser, Herald of Wales, Warwick Times, Alnwick Gazette Highland News, &c., &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.)

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.) Cancer (2 P.M.)

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

SATURDAY (19th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (14th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Dr. H. Walsham and Dr. C. Beale: On the Diagnostic Value of Skiagraphy in Chest Diseases, with Skiascopic and Lantern Demonstrations.

TUESDAY (15th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. A Card Specimen will be shown by Dr. O. K. Williamson. Mr. S. G. Shattock: Chondro-sarcoma of Tibia associated with Pendulous Bodies.—Dr. M. Fletcher: Chronic Cholangitis in a Child.—Dr. H. D. Rolleston: Primary Carcinoma in a Cirrhotic Liver.—Mr. P. de Santi: Adenomatous Papilloma of the Sigmoid Flexure.—Mr. G. Perues: The Bacilli of Leprosy, are they Intra- or Extra-cellular?

CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, Sloane-square, S.W.).—8.30 P.M. Paper:—Mr. C. A. Morris: Tubal Pregnancy.—Dr. Blumfeld: After-effects of Anæsthetics.—Dr. C. J. Harrison: Acute Rheumatism of Childhood.

WEDNESDAY (16th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. The President: Annual Address.

ROYAL METEOROLOGICAL SOCIETY (Institute of Civil Engineers, Gt. George-street, Westminster, S.W.).—7.30 P.M. Ordinary Meeting. 7.45 P.M. Annual General Meeting. Report of the Council. Election of Officers and Council for the ensuing year. Address:—Dr. C. T. Williams (President): The Climate of Norway and its Factors (illustrated by lantern slides).

FRIDAY (18th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Meeting.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (East London Hospital for Children, Shadwell, E.).—5.30 P.M. Cases will be shown by Dr. M. Fletcher (introduced), Mr. H. B. Robinson, Dr. G. Little (introduced), and Mr. F. C. Abbott. Papers:—Dr. L. Guthrie: A Case of Chronic Interstitial Nephritis in a Girl aged seven years.—Mr. S. Spokes: The Immediate Regulation of Children's Teeth, with Models to illustrate cases Before and After Treatment.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (14th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. Colcott Fox: Consultation. (Skin.)

TUESDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Sir W. Broadbent: Consultation. (Medical.)

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. R. Symes Thompson: The Organs of Perception.

WEDNESDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Cantlie: Consultation. (Surgical).

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. R. Symes Thompson: Training of Perceptions.

THURSDAY (17th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M. Mr. Lennox Browne: Intra-Nasal Obstructions; Soft—Hypertrophies of the Turbinals, Polypi, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Mr. Gibbs: Surgery in South Africa. (Post-graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Colman: Demonstration of Selected Cases.

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. R. Symes Thompson: Disorders of Perception.

FRIDAY (18th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. Spicer: Consultation. (Eye.)

GRESHAM COLLEGE (Basinghall-street, E.C.).—6 P.M. Dr. R. Symes Thompson: Travel in Relation to Disordered Perceptions.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1900, which was completed with the issue of Dec. 29th, and the Title-page to the Volume were given in THE LANCET of Jan. 5th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1900 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, W.C.

Communications, Letters, &c., have been received from—

A.—Association for Pure Vaccine Lymph, Lond.; A. M. L. R.; Mons. J. Astier, Asnières, France; Messrs. Arnold and Sons, Lond.; Messrs. Allen and Hanburys, Lond.; A. A.

B.—Mr. H. L. Barnard, Lond.; Bolton Infirmary, Secretary of; Dr. L. Blanc, Aix-les-Bains; Birmingham General Hospital, House Governor of; Messrs. Brown, Gould, and Co., Lond.; C. Birchall, Ltd., Liverpool; Mons. O. Berthier, Paris; Messrs. F. Bayer and Co., Elberfield; Blackburn Infirmary, Secretary of; Mr. G. A. Brown, Tredegar; Mr. W. P. Bothamley, Lond.; Dr. J. Bell, Hong-Kong; Mr. R. Bucknall, Lond.; Mr. A. H. Burt, Brighton.

C.—Dr. W. Craig, Sheffield; Mr. J. Jackson Clarke, Lond.; Messrs. J. and A. Churchill, Lond.; Dr. R. J. Collie, Lond.; Messrs. Cassell and Co., Lond.; Lond.; County Asylum, Shrewsbury, Medical Superintendent of; Messrs. Cox, Sons, and Co., Williton; Messrs. W. P. and W. Cox, Leicester; City of Bristol Health Department; Canada Chamber of Mines, Secretary of; Mr. A. F. Cooper, Reading; Mr. H. W. Cox, Lond; Dr. W. Cowie, Charlton; Mr. G. A. Clarkson, Leicester.

D.—Mr. G. M. Dawkin, Pontypridd; Dr. M. Dockrell, Lond.; Messrs. W. Dawson and Sons, Lond.; Mr. E. B. Dowsett, Lond.; Mr. G. H. Douthwaite, Stockton-on-Tees; Dr. L. Dobson, Lond.; Dover Hospital, Hon. Secretary of; Dorset County Hospital, Dorchester, Clerk of; Messrs. Derry and Sons, Nottingham.

E.—Dr. W. Elder, Leith.

F.—Mr. N. Hay Forbes, Tunbridge Wells; Messrs. Fassett and Johnson, Lond.; Messrs. Findlater, Mackie, and Co., Lond.; Fisherton House Asylum, Salisbury, Medical Superintendent of; Dr. Ninian Falkiner, Dublin; Dr. Finny, Kington.

G.—Messrs. Gale and Co., Lond.; G. F. M.; Mr. C. Gledhill, Lond.; Messrs. W. Gaymer and Son, Attleborough; Dr. R. D. Gray, Oxford.

H.—Messrs. Hazell, Watson, and Viney, Lond.; Messrs. Hirschfeld Bros., Lond.; Humphreys, Ltd., Lond.; *Halifax Courier*; Mr. P. L. Hope, Lond.; Dr. J. P. Henry, Lond.; Mr. Braine Hartnell, Stroud.

I.—Interne Pupils' Mess Association, Dublin, Secretary of; Isle of Thanet Union, Minster, Clerk of.

J.—Mr. H. I. Jones, Leytonstone; Mr. H. O. Jones, Rhos.

K.—Mr. A. Kidd, Ilford; Messrs. R. A. Knight and Co., Lond.

L.—Dr. Robert J. Lee, Lond.; Messrs. Lee and Nightingale, Liverpool; Mr. E. J. Lane, Bath; Mr. F. W. Lowndes, Liverpool; London Press Exchange.

M.—Mr. J. Marshall, Pontnewydd; Medical Graduates' College, Lond.; Monkwearmouth, &c., Hospital, Hon. Secretary of; Dr. J. A. Menzies, Rochdale; Dr. Martin, Gilford; Maltina Manufacturing Co., Lond.; Mendip Hills Sanatorium, Wells; Moncall Fever Hospital, Manchester, Medical Superintendent of; Mr. J. Munford, Lond.; Dr. A. S. Morton, Lond.; Mr. R. J. Mitchell, Lond.

N.—Mr. G. P. Newbolt, Liverpool; Messrs. Nicolay and Co., Lond.; Mr. G. Natorp, Lond.; Mr. H. Needes, Lond.

P.—Mr. Y. J. Pentland, Edinburgh; Mr. F. T. Pain, Lond.; Messrs. G. Pulman and Sons, Lond.; Mr. R. L. Pratt, Darlington; Dr. C. L. Peters, Lond.; Pathological Laboratory, Cambridge Librarian of; Messrs. Peacock and Hadley, Lond.

R.—Dr. J. W. Robinson, Boxmoor; Royal Southern Hospital, Liverpool, Secretary of; R. T. C.; Dr. H. Rutherford, Glasgow; Dr. D. J. Roberts, Edinburgh; Mr. H. Rainbird, Saxilby.

S.—Mr. W. B. Sheriand, Ventnor; Dr. W. J. Sinclair, Manchester; Messrs. Squire and Sons, Lond.; Messrs. Street and Co., Lond.; Sanitas Co., Lond.; Stockton and Thornaby Hospital, Secretary of; Smith's Advertising Agency, Lond.; South Kensington Nurses' Coöperation, Lond.; *St. Paul Medical Journal*, U.S.A., Editor of; Mons. G. Steinheil, Paris; Messrs G. Street and Co., Lond.; Miss Slater, Tunbridge Wells; Scholastic, Clerical, &c., Association, Lond.; Strawberry-mark, Lond.; Spectacle-makers' Company, Clerk of; Dr. J. B. H. Sawyer, Birmingham; Mr. Sydney Stephenson, Lond.

T.—Tiverton Infirmary, Secretary of; Mr. N. W. Thomas, Lond.; Mr. S. C. Trampleasure, Bootle; Mr. B. Truman, Folkestone.

V.—Victoria Hospital, Burnley; Vinolia Co, Lond.; Vaccine, Liverpool.

W.—Dr. J. A. Wilson, Springburn; West-End Hospital for Paralysis, &c., Matron of; West Herts Infirmary, Hemel Hempstead; Dr. F. G. Wallace, Lond.; W. D.; Mr. W. F. Walker, Kinsland; Mr. W. Wright, Birmingham; Mr. L. H. Wilson, Bath; Dr. Whitelaw, Kirkintilloch.

X.—X. Y. Z.

Y.—Mr. J. H. Yolland, Bromley Common; Young Practitioner, Dundee.

Z.—Dr. H. Ziemann, Victoria.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. H. R. Andrese, Lond.; Mr. S. O. Addy, Cherrytree; A. D. D.; A. L. R.; A. B., Breckenhurst; Dr. A. W. M. Auden, Leigh.

B.—Mr. W. B. Boulter, Woolwich; Mr. H. Butterfield, Northampton; Dr. H. D. Bishop, Guernsey; Mr. R. Byrack, Khetri, India; Mr. D. T. Barry, Rock Ferry; T. B. Browne, Ltd., Lond.; Messrs. Biddle and Sons, Guildford; Messrs. B. C. Berryman and Sons, Lond.; Messrs. Berry and France, Wigan; Mr. F. B. Bissell, Woodford Halse; Mr. G. A. H. Barton, Morchard Bishop; Sir W. Broadbent, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. Bates, Hendy, and Co., Reading; Dr. A. Bronner, Bradford.

C.—Dr. J. Cropper, Chepstow; Dr. R. H. P. Crawfurd, Lond.; Messrs. A. Cohen and Co., Lond.; Mr. W. T. Clarke, Morley; Dr. D. A. Campbell, Halifax, Nova Scotia; Mr. H. Cripps, Lond.; Capsuloid Co., Lond.; C. B. R.; Messrs. Samson Clark and Co., Lond.; C. W. H.; C. M. L.; Mr. C. P. Creed, Boscombe; Miss A. R. Cooper, Paignton; Miss Christian, Barrow-in-Furness; C. G. G.; Mr. R. P. Court, Hambledon.

D.—Dr. W. L. Dickinson, Lond.; Messrs. Darley and Cumberland, Lond.; D. J. H.; D. M. R. G.; Dr. W. Duff, Wisbaw; Doctor, Wolverhampton.

E.—Mr. W. P. Everard, Athlone; Mr. S. Edwards, Spennymoor; Elms (The), Iden; E. L. T. S., B. H.

F.—Major Fernandez, Folkestone; Mr. H. McG. Forbes, Cumineston; Herr N. Flesch, Budapest.

G.—Dr. G. Guerrini, Bologna; Mr. A. Greenham, Shanklin; Dr. A. Gondoux, Villeneuve; Mr. G. H. Gemmell, Edinburgh; Miss Good, Acton; G. H. Gower Union, Swansea, Clerk of; Surgeon H. W. Gordon Greene, R.N., Plymouth; G. R. W.; Mr. H. E. Girdlestone, Bournemouth.

H.—Mr. A. B. Hearn, Chatham; Mr. W. Horton, Chasetown; H. H. I.; Miss V. Hughes, Lond.; H. D.; H. A. B.; Staff-Surgeon W. B. Home, R.N. Edinburgh; Dr. W. Hutchinson, Widnes; Dr. H. R. W. Hoffmeister, East Cowes; H. J.

J.—Mr. G. H. Johnston, Ticehurst; Mr. G. S. Jackson, Alnwick; Dr. W. M. Jones, Torquay; Dr. J. Jones, Clydach; J. W. G.; J. H.; Dr. A. H. James, Aberystwyth; J. McN.; J. G. B.; J. A. S. M.

K.—Dr. J. G. Kerr, Cumnock; Mr. B. L. Kalra, Poonch, India; Dr. J. H. Kellogg, Battle Creek, U.S.A.; Kreochyle Co., Lond.; Lieutenant-Colonel A. Kirwan, Leicester.

L.—Dr. H. Lloyd, St. Asaph; Dr. J. Lane, Newport; Lieutenant J. C. H. Leicester, I.M.S., Bombay; London Wax Vesta Co.; Dr. C. Lamplough, Chatteris; Mons. H. Le Soudier, Paris; Mr. L. Lewis, Neath; Laboratory.

M.—Mr. J. Montford, Upton-on-Severn; M., Exmouth; Messrs. R. MacGeorge and Co., Lond.; Medical Society of Victoria, Melbourne, Hon. Secretary of; Messrs. J. Murdoch and Co., Lond.; Dr. A. L. McKenzie, Gaza, India; M., Oamotherly; Dr. J. McClymont, Leyton; Mr. S. K. Mukerji, Rai Baraidly, India; Mr. S. Massey, Fairfield; Mr. R. R. de Martini, Sicley; Dr. A. M. Mackintosh, Cowdenbeath; Dr. J. Muir, Bellshill; Mr. S. Mackey, Manchester; Mr. C. T. B. Maisey, Manchester; Mr. R. P. Marett, St. Lawrence, Jersey; Mile End-road (252), Lond.; Mr. H. W. Mills, Ruardean.

N.—New Industrial Refining Co., Lond.; Nottingham Union, Clerk of; Mr. F. C. Needes, Lond.

O.—Professor W. Osler, Baltimore; Mr. T. B. O'Connor, Lond.

P.—Dr. A. Packman, Stroud; Messrs. C. Pool and Co., Lond.; Messrs. Parke, Davis, and Co., Lond.; Plasmon Syndicate Co.; Dr. H. A. Perkins, Tunbridge Wells; Dr. G. N. Pitt, Lond.; Parish of Paddington Clerk of.

R.—Dr. G. J. Robertson, Oldham; Dr. N. Rivellini, Morcone, Italy; Messrs. A. Riddle and Co., Lond.; Dr. A. Routh, Lond.; R. W. J.; The Rector, Broadstairs; R. A.; Mr. A. R. Rendle, Stoke; Messrs. H. and J. Reading Lond.; Royal Isle of Wight Infirmary, Ryde, Secretary of; Dr. G. Rankin, Lond.; Dr. J. B. Ryley, Lond.; Dr. W. C. Rowlands, Maesteg; Mr. R. L. Rutherford, Foxrock.

S.—Dr. S. Stronge, Lond.; Dr. S. Simpson, Great Haywood; Mr. H. J. Sharp, Manchester; Messrs. A. Stahl and Co., Lond.; Dr. G. Sprott, Hobart, Tasmania; Surgeon, Chellaston, Stourbridge Dispensary, Secretary of; Dr. J. Sutherland, Melcetter, Rhodesia; Mr. J. Sampson, York; Dr. T. W. Smith, Bath; South Devon, &c., Hospital, Plymouth, House Steward of.

T.—Mr. A. H. Trevor, Lond.; Mr. W. P. Thornton, Canterbury; Mr. A. H. Tubby, Lond.; Dr. W. Thorp, Limerick; Mr. R. Trimble, West Bromwich; T. H. W., Mr. T. Thomson, Lond.

V.—Mr. F. H. V. Voss, Rockhampton, Queensland.

W.—Dr. J. T. Wilson, Hamilton; Dr. S. L. B. Wilks, Grassington; Westminster Hospital Medical School; Dr. S. West, Lond.; Dr. M. W. Williams, Cilfynydd; Dr. W. Winslow, Wallington; Mons. H. Welter, Paris; Dr. W.; Mr. H. F. Wigg, Lond.; W. A. C.; Mr. H. Wolseley-Lewis, Epsom; Mr. J. J. Waddelow, Whittlesey; Mr. J. Williams, Bradford; Messrs. H. Wilson and Son, Lond.; W. B. P.

X.—X. Z., South Hackney.

Z.—Messrs. A. and M. Zimmermann, Lond.; Dr. F. S. Zaytoun, Otterburn.

EVERY FRIDAY, **THE LANCET.** PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ...	Seven Lines and under	£0 5 0
Official and General Announcements	Ditto	0 5 0
Trade and Miscellaneous Advertisements	Ditto	0 4 6
	Every additional Line	0 0 6

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.

Terms for Position Pages and Serial Insertions on application.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France,—J. ASTIER, 8, Rue Traversière, Asnières, Paris.